AD 746 339

DOCUMENT CONTROL DATA - R & D

(Security classification of title, body of abstract and indexing annotation must be entered when the overall report is classified)

1 ORIGINATING ACTIVITY (Corporate author)

Informatics Inc.
6000 Executive Blvd
Rockville, Md. 20852

2a. REPORT SECURITY CLASSIFICATION

UNCLASSIFIED

2b. GROUP

3 REPORT TITLE

BIBLIOGRAPHY OF SOVIET LASER DEVELOPMENTS, NO. 7

4 DESCRIPTIVE NOTES (Type of report and inclusive dates)

Scientific...Interim

5 AUTHOR(S) (First name, middle initial, last name)

Stuart G. Hibben

6 REPORT DATE	7a. TOTAL NO. OF PAGES	7b. NO. OF REFS
May 17, 1972	91	

8a. CONTRACT OR GRANT NO	9a. ORIGINATOR'S REPORT NUMBER(S)
F44620-72-C-0053	
b. PROJECT NO	
c. AO 1622-3	9b. OTHER REPORT NO(S) (Any other numbers that may be assigned this report)
d. 62701	AFOSR-TR-72-1320

10 DISTRIBUTION STATEMENT

Approved for public release; distribution unlimited

11 SUPPLEMENTARY NOTES	12. SPONSORING MILITARY ACTIVITY
Tech. Other	Air Force Office of Scientific Research 1400 Wilson Boulevard (NPG) Arlington, Virginia 22209

13 ABSTRACT

This report covers the first quarter of 1972 with the major yield of information coming from the approximately 30 periodicals known to report the most advanced and interesting findings in Soviet laser technology. This as well as the previous reports covers the following topics: (1) laser research--solid state, liquid, gas and chemical lasers; UV; components; nonlinear optics; spectroscopy of laser materials; short pulse generation; crystal growing; and general theory; (2) laser applications--biological effects, communications, computer technology, holography, instrumentation, materials processing, and plasma generation.

DD FORM 1 NOV 68 1473

BIBLIOGRAPHY OF SOVIET LASER DEVELOPMENTS

No. 7, January-March 1972

Sponsored by
Advanced Research Projects Agency

ARPA Order No. 1622-3

May 17, 1972

ARPA Order No. 1622-3
Program Code No: 62701D2F10
Name of Contractor:
Informatics Inc.
Effective Date of Contract:
January 3, 1972
Contract Expiration Date:
December 31, 1972

Amount of Contract: $250,000
Contract No. F44620-72-C-0053
Principal Investigator:
Stuart C. Hibben
Tel: (301) 779-2850 or
(301) 770-3000
Short Title of Work:
"Soviet Lasers"

This research was supported by the Advanced Research Projects Agency of the Department of Defense and was monitored by the Air Force Office of Scientific Research under Contract No. F44620-72-C-0053. The publication of this report does not constitute approval by any government organization or Informatics Inc. of the inferences, findings, and conclusions contained herein. It is published solely for the exchange and stimulation of ideas.

Prepared by

Informatics Inc.
6000 Executive Boulevard
Rockville, Maryland 20852

Introduction

This bibliography has been compiled by the staff of Informatics Inc. in response to a continuing contractual assignment to monitor current Soviet-bloc developments in the quantum electronics field. Of all material reviewed, the major yield has been from the approximately 30 periodicals which are known to report the most advanced and interesting findings in Soviet laser technology.

The period covered is the first quarter of 1972, and includes all significant laser-related articles received by us during that interval. The structure and selection criteria are basically those used in the preceding reports.

For convenience we have abbreviated frequently cited source names; a source abbreviation list and an author index are included. Unless indicated by a parenthesized (RZh, LZhS) notation, all cited sources are available at Informatics Inc.

Acknowledgement is due to the consultant effort of Mr. Yuri Ksander of the Rand Corporation for assistance in selection and structure of the material.

SOVIET LASER BIBLIOGRAPHY, JANUARY - MARCH 1972

TABLE OF CONTENTS

I. BASIC RESEARCH

A. SOLID STATE LASERS

1. Crystal

a. Ruby

1. Arifov, U. A., M. R. Bedilov, Kh. Khaydarov, and U. Egamov. Effects of Co^{60} gamma radiation on stimulated emission properties of a ruby laser. DAN SSSR, v. 203, no. 1, 1972, 68-70.

2. Bedilov, M. R., and Kh. Khaydarov. Properties of stimulated emission from a ruby laser irradiated by Co^{60} gamma rays. ZhTF, no. 2, 1972, 391-394.

b. Transition Ion Activated: Fluorides

3. Ananasevich, P. A., R. I. Gintoft, and A. G. Makhanek. On the nature of two-photon excitation of luminescence in CaF_2 -Er^{3+} and -Ho^{3+} by a neodymium laser. ZhPS, v. 16, no. 3, 1972, 443-452.

4. Sychugov, V. A., and G. P. Shipulo. Temperature studies of LaF_3 - Nd^{3+} crystals. ZhPS, v. 16, no. 1, 1972, 71-75.

c. Transition Ion Activated: Miscellaneous

5. Belan, V. R., M. Ye. Zhabotinskiy, V. F. Zolin, Yu. I. Krasilov, B. N. Kulikovskiy, V. G. Lebedev, L. V. Levkin, Yu. P. Rudnitskiy, L. K. Shubochkin, and G. V. Ellert. RE-activated materials as active elements in lasers and laser amplifiers. Otkr izobr, no. 8, 1972, #330505.

6. Yeru, I. I., and S. A. Peskovatskiy. Use of andalusite in "warm" paramagnetic amplifiers. IVUZ Radiofiz, no. 1, 1972, 38-42.

d. YAG

7. Akhmanov, S. A., Yu. D. Golyayev, and V. G. Dmitriyev. Spectral characteristics and oscillation dynamics in quasi-cw YAG:Nd lasers. ZhETF, v. 62, no. 1, 1972, 133-143.

8. Dmitriyev, V. G., L. M. Kuzina, Yu. I. Kulikov, and N. V. Shkunov. Time characteristics of c-w emission from an yttrium-aluminum garnet laser with neodymium. PTE, no. 6, 1971, 145-148.

9. Kalinin, Yu. A., A. A. Kozhevnikova, G. S. Leonov, R. G. Mananov, and N. V. Shkunov. Effect of the gas pressure in arc lamps on the effectiveness of pumping in a c-w garnet laser. IN: Sb. 8, 102-104.

e. YIG

10. Mykityuk, V. I., and A. A. Solomko. Diffraction of a laser beam in YIG domains. IN: Sb. 8, 124-126.

f. Miscellaneous

11. Abdulsabirov, R. Yu., and I. N. Kurkin. Parameters of a crystalline field at the Ca II positions in fluoro-apatite single crystals. OiS, v. 32, no. 2, 1972, 429-430.

12. Natadze, A. L., and D. Ye. Onopko. Parameters of the crystalline field for scheelite crystals. OiS, v. 32, no. 3, 1972, 556-559.

13. Zheltov, G. I., A. S. Rubanov, and A. V. Chaley. Stress state and thermal deformation of the active elements of solid state lasers. IN: Sb. 15, 445-478. (RZhF, 1/72, #1D1158)

2. Semiconductor: Simple Junction

a. GaAs

14. Akimov, Yu. A., A. A. Burov, Yu. A. Drozhbin, V. A. Kovalenko, G. V. Rodichenko, B. M. Stepanov, and V. A. Yakovlev. Obtaining adjustable light pulses in a laser with electron beam pumping. IN: Sb. 8, 105-106.

15. Akimov, Yu. A., A. A. Burov, O. I. Govorkov, I. V. Kryukova, G. V. Rodichenko, and B. M. Stepanov. The KGP-1M semiconductor laser with electron excitation. IN: Sb. 1, 15-20. (RZhRadiot, 1/72, #1D376)

16. Bykovskiy, Yu. A., V. L. Velichanskiy, V. A. Maslov, and V. L. Smirnov. Method for increasing the coherence of pulsed semiconductor laser radiation. OiS, v. 32, no. 3, 1972, 621-623.

17. Gribkovskiy, V. P., V. K. Kononenko, Yu. V. Makritskiy, and V. A. Samoylyukovich. Types of efficiency loss in semiconductor light sources. IN: Sb. 16, 107-113. (RZh Elektr, 11/71, #11B371)

18. Pleshkov, A. A., O. N. Prozorov, and V. G. Trukhan. Self-modulating regime for a semiconductor laser with a photogalvanic nonlinear element. FTP, no. 1, 1972, 163-166.

b. GaSb

19. Kyuregyan, A. S., I. K. Lazareva, V. M. Stuchebnikov, and A. E. Yunovich. Photoluminescence of gallium antimonide at a high excitation level. I. Lightly doped GaSb. FTP, no. 2, 1972, 242-247.

20. Kyuregyan, A. S., V. M. Stuchebnikov, and A. E. Yunovich. Photoluminescence of gallium antimonide at a high excitation level. II. Heavily doped GaSb. FTP, no. 2, 1972, 287-293.

c. GaSe

21. Akhundov, G. A., A. A. Agayeva, V. M. Salmanov. Mechanism of stimulated emission in GaSe crystals under two-photon excitation. FTP, no. 2, 1972, 405-407.

3. Semiconductor: Heterojunction

22. Alfyorov, Zh. I., V. M. Andreyev, T. Ya. Belousova, V. I. Borodulin, V. A. Gorbylev, G. T. Pak, A. I. Petrov, Ye. L. Portnoy, N. P. Chernousov, V. I. Shveykin, and I. V. Yashchumov. Effective injection heterolasers operating at 7400-9000 Å. FTP, no. 3, 1972, 568-569.

23. Barnem, R. D., N. N. Golon'yak, G. V. Korb, G. M. Maksi, D. R. Sayfers, D. B. Vudkhauz, and Zh. I. Alfyorov. AlGaAsP solid solutions, and injection lasers with two heterojunctions based on such solutions. FTP, no. 1, 1972, 97-102.

24. Bogatov, A. P., L. M. Dolginov, P. G. Yeliseyev, L. D. Libov, and L. V. Druzhinina. Radiative characteristics of a symmetric heterostructure semiconductor laser with band geometry in pulsed and c-w regimes at 300°K. FTP, no. 1, 1972, 43-48.

25. Kurbatov, L. N., V. I. Molochev, V. V. Nikitin, and A. I. Sharin. Time characteristics of heterostructure injection lasers. IN: Sb. 8, 110-112.

26. Yeliseyev, P. G., O. D. Knab, A. I. Petrov, V. D. Frolov, V. I. Shveykin, and I. A. Shmerkin. Effect of an $Al_xGa_{1-x}As$ solid solution composition on the optical limiting effect in a heterostructure based on the solution. FTP, no. 1, 1972, 177-179.

4. Semiconductor: Theory

27. Allakhverdyan, R. G., V. N. Morozov, A. N. Orayevskiy, and A. F. Suchkov. Effect of refractive index nonlinearity on the dynamics of semiconductor laser emission. IN: Sb. 8, 53-59.

28. Chaykovskiy, I. A. Indirect multiphoton transitions in semiconductors with extremes in the Brillouin zone center. FTP, no. 1, 1972, 3-10.

29. Chaykovskiy, I. A. Indirect multiphoton transitions in a quantizing magnetic field. FTP, no. 2, 1972, 229-236.

30. Godenko, L. P., and V. S. Mashkevich. Theory of laser generation threshold in homogeneous semiconductors with exponential band tail. Physica status solidi (a), v. 9, no. 1, 1972, 59-67.

31. Semenov, A. T. Injection laser in a self-modulating regime. IN: Sb. 8, 107-110.

32. Valov, P. M., B. S. Ryvkin, S. M. Ryvkin, Ye. V. Titova, and I. D. Yaroshetskiy. Anisotropic effect of electron drag by light under photoionization of impurity centers in semiconductors. FTP, no. 1, 1972, 123-128.

5. Glass

33. Artamonova, M. V., Ch. M. Briskina, A. I. Burshteyn, L. D. Zusman, and A. G. Skleznev. Studying the time characteristics of Nd^{3+} luminescence, and evaluating the migration of electron excitation over these ions in glass. ZhETF, v. 62, no. 3, 1972, 863-871.

34. Babenko, V. A., B. Ya. Zel'dovich, V. I. Malyshev, and A. A. Sychev. Radiation statistics of a Q-switched neodymium glass laser. ZhETF, v. 61, no. 6, 1971, 2270-2278.

35. Baumhacker, H. Neodymium glass laser system. IPP-Berlin, no. 4/82, 1971, 94 p. (RZhF, 1/72, #1D1191)

36. Kosyakov, V. I., B. V. Makushkin, A. I. Ponyayev, and Ye. P. Smirnova. Excitation of luminescence in neodymium -activated glass by laser radiation at 1060 nm.OiS, v. 32, no. 2, 1972, 437-439.

37. Margaryan, A. A., M. G. Manvelyan, and R. V. Akopyan. Glass formations of SiO_2-Nd_2O_3 and SiO_2-La_2O_3-R_2O systems. Armyanskiy khimicheskiy zhurnal, no. 11, 1971, 1022-1024.

38. Markin, A. S. Discriminatory oscillation types and the mode -locking effect in a solid state laser with bleachable filters. IN: Tr. 20, 3-65.

39. Planner, A., and M. Szymanski. On a new Nd^{3+} glass laser system permitting the production of giant optical pulses. Acta physica polonica, v. A41, no. 2, 1972, 241-244.

40. Vanyukov, M. P., V. A. Serebryakov, V. N. Sizov, A. D. Starikov, and O. A. Shorokhov. High power single-pulse laser with an unstable resonator. OMP, no. 1, 1972, 58-59.

41. Venkin, G. V., V. S. Dneprovskiy, V. P. Protasov, N. D. Smirnov, and A. P. Sukhorukov. Single-mode laser with continuously adjustable pulse width. IN: Sb. 8, 97-100.

42. Yeremin, V. I., V. A. Kolosov, and L. V. Norinskiy. High power monopulse single-mode neodymium generator with frequency stabilization. PTE, no. 1, 1972, 170-171.

43. Zabokritskiy, B. Ya., A. D. Manuilskiy, S. G. Odulov, and M. S. Soskin. Generation from Nd^{3+} in crystals and glass at 1.3μ, and simultaneous generation at 1.06 and 1.3μ. UFZh, no. 3, 1972, 501-503.

B. LIQUID LASERS

1. Dyes

a. Rhodamine

44. Alekseyev, V. A., I. V. Antonov, V. Ye. Korobov, S. A. Mikhnov, V. S. Prokudin, and B. V. Skvortsov. Energy characteristics of generation in rhodamine 6G during pumping by a self-constricted discharge. IN: Sb. 8, 100-102.

45. Mikhnov, S. A., and V. S. Strizhnev. Effect of excitation conditions on the energy parameters of generation in rhodamine 6G. ZhPS, v. 16, no. 2, 1972, 262-269.

b. Polymethine

46. Bonch-Bruyevich, A. M., T. K. Razumova, and G. M. Rubanova. Relationship between generation characteristics of polymethine dyes and stimulated absorption. OiS, v. 32, no. 2, 1972, 362-366.

c. Phthalimide

47. Gladchenko, L. F., L. G. Pikulik, and A. D. Das'ko. Dual band generation in phthalimide solutions. ZhPS, v. 16, no. 2, 1972, 270-273.

48. Pikulik, L. G., L. F. Gladchenko, and A. D. Das'ko. Generation in solutions of phthalimide products. IN: Sb. 15, 120-146. (RZhF, 1/72, #1D1198)

d. Miscellaneous Organics

49. Aristov, A. V., and Yu. S. Maslyukov. Effect of the triplet -triplet transition on the generation threshold of organoluminophors. OiS, v. 32, no. 2, 1972, 342-345.

50. Aristov, A. V., and V. A. Kuzin. Generation of stimulated emission by exciplexes in organoluminophor solutions. OiS, v. 32, no. 1, 1972, 115-119.

51. Borisevich, N. A., and V. A. Tolkachev. Features of generation and amplification of electron-vibrational transitions in complex molecules. IN: Sb. 15, 147-164. (RZhF, 1/72, #1D1195)

52. Borisevich, N. A., I. I. Kalosha, V. F. Lavrushin, V. P. Maslennikova, and V. A. Tolkachev. Generating capability of isomeric 1,4-dipyrazolinylbenzines. ZhPS, v. 16, no. 1, 1972, 45-48.

53. Goncharov, V. A., G. M. Zverev, and A. D. Martynov. Effect of triplet levels on energy characteristics of lasers based on certain solutions of xanthene dyes, under excitation by a mode-locked laser. OiS, v. 32, no. 1, 1972, 218-219.

54. Kortenski, T., S. Ivanov, I. Svirevski, and M. Miteva. Possibility of stimulated emission from iodine and bromine molecular complexes in arylisoindolyl-aryl pseudoiso-indolenylidene-arylmethane compounds. IN: Sb. 17, 97-102. (RZhKh, 19 ABV, 5/72, #5B180)

55. Pilipovich, V. A., and A. A. Kovalev. Anisotropy of stimulated emission from organic compounds. IN: Sb. 15, 165-211. (RZhF, 1/72, #1D1196)

56. Rubinov, A. N., and T. I. Smol'skaya. Optical generation in dye solutions under flashlamp pumping. IN: Sb. 15, 33-80. (RZhF, 1/72, #1D1200)

57. Stepanov, B. I. Calculating the generation power of organic compounds. IN: Sb. 15, 5-32. (RZhF, 1/72, #1D1194)

58. Svirevski, I., T. Kortenski, S. Ivanov, and M. Miteva. Effect of organic solutions on the lasing possibilities of dark blue 2,3-diphenylindone compounds. IN: Sb. 17, 67-72. (RZhKh, 19ABV, 4/72, #4B130)

C. GAS LASERS

1. Simple Mixtures

a. He-Ne

59. Goncharuk, I. N., V. Yu. Davydov, I. T. Savatinova, and E. V. Chisler. A 250 milliwatt helium-neon laser with a mercury cathode. OiS, v. 32, no. 2, 1972, 427-428.

60. Mazan'ko, I. P., and G. A. Petrashko. Effect of parasitic generation at 3.39μ on emission fluctuations of a He-Ne laser operating at 0.63μ . ZhETF P, v. 15, no. 5, 1972, 263-265.

61. Mukhamedgaliyeva, A. F., V. M. Tatarenkov, A. N. Titov, and A. V. Uspenskiy. Studying the Lamb dip and determining the radiation line width of the $3s_2$--$3p_4$ transition of the Ne^{20} atom. IN: Tr. 21, 281-290. (LZhS, 4/72, #10354)

62. Parshin, D. Ya. Study of internal modulation of emission from an He-Ne gas laser. IN: Tr. 22, 25-29. (RZhF, 2/72, #2D1364)

63. Troitskiy, Yu. V. Limit of a single frequency regime in a helium-neon laser. ZhTF, no. 2, 1972, 395-397.

64. Zakharenko, Yu. G. Effect of gas pressure on the relaxation vibration region in a discharge. OiS, v. 32, no. 3, 1972, 455-457.

b. He-Cd

65. Agarbiceanu, I. I., A. M. Preda, A. I. Ciura, and I. M. Popescu. ^{113}Cd--Ne laser in a c-w regime. Revue Roumaine de physique, v. 16, no. 6, 1971, 607-612.

66. Dyatlov, M. K., G. I. Mal'kova, V. A. Novikova, V. A. Stepanov, and G. A. Sukhanova. Service life of a helium-cadmium laser. IN: Sb. 18, no. 1 (21), 1971, 77-85. (RZhRadiot, 7/71, #7D134)

67. Lokhmatov, A. I., P. Ya. Belousov, and V. P. Koronkevich. Determining the emission wavelength in a helium-cadmium laser at the center of the Lamb dip. OiS, v. 32, no. 1, 1972, 223-225.

2. Molecular Beam and Ion

a. CO_2 Mixtures

68. Alekseyeva, A. N., and L. M. Pyatkova. Obtaining single-frequency emission in a carbon dioxide molecular laser. OiS, v. 32, no. 1, 1972, 163-167.

69. Avdon'kin, V. V., A. V. Gorelik, A. Ye. Grodshteyn, L. V. Davydkina, T. V. Zigalenko, E. A. Ostapchenko, and I. D. Nazarov. Stabilization of the gas composition in sealed-off CO_2 lasers. IN: Sb. 18, no. 3(32), 1971, 106-108. (RZhRadiot, 1/72, #1D312)

70. Basov, N. G., E. M. Belenov, V. A. Danilychev, and A. F. Suchkov. Electronically ionized high pressure gas lasers. VAN, no. 3, 1972, 12-18.

71. Berestenko, V. M., and N. D. Kosov. Interdiffusion coefficients of CO_2 gas in hydrogen, helium, nitrogen and argon under high pressures. IAN KazSSR. Seriya fiziko-matematicheskaya, no. 6, 1971, 38-41.

72. Biryukov, A. S., V. K. Konyukhov, A. I. Lukovnikov, V. A. Myslin, R. I. Serikov, and Ye. S. Trekhov. Measuring vibrational relaxation time of the 0001 level of a CO_2 molecule between 300--600°K. ZhPS, v. 16, no. 2, 1972, 249-252.

73. Churakov, V. V., and B. I. Stepanov. Effect of resonance exchange between the 10^00 and 02^00 levels on the amplification of a weak signal in a CO_2 amplifier. ZhPS, v. 16, no. 1, 1972, 49-53.

74. Golubev, S. A., V. D. Pis'mennyy, T. V. Rakhimova, and A. T. Rakhimov. Effect of a proton beam on generation in a CO_2 gas laser. ZhETF, v. 62, no. 2, 1972, 458-465.

75. Il'ina, O. K., G. A. Machulka, and L. A. Perova. CO_2 gas laser series based on the LG-17 structural type. IN: Sb. 8, 78-83.

76. Karlov, N. V., Yu. B. Konev, and G. P. Kuz'min. Energy characteristics of gas discharge CO_2 lasers. KSpF, no. 8, 1971, 17-25. (RZhRadiot, 1/72, #1D358)

77. Margulis, V. M., and A. D. Margolin. Theory of a diffused CO_2 laser. ZhTF, no. 3, 1972, 647-649.

78. Mikaberidze, A. A., V. N. Ochkin, and E. N. Lotkova. On determining the gas temperature in the plasma discharge of a CO_2 laser. ZhPS, v. 16, no. 3, 1972, 426-429.

79. Ochkin, V. N., and N. A. Shubina. Effect of trace water vapor on plasma processes of a gas-discharge CO_2 laser. KhVE, v. 6, no. 1, 1972, 26-30.

b. Noble Gas

80. Kitayeva, V. F., N. N. Sobolev, I. P. Sizov, Yu. V. Troitskiy, and I. L. Chistyy. Spectral characteristics of a single-frequency argon laser with absorbing film. IN: Sb. 8, 91-94.

81. Malakhov, Yu. I., and V. G. Potemkin. Lifetimes of some Ar I and Ar II levels. OiS, v. 32, no. 2, 1972, 245-248.

82. Volod'kina, V. L., and V. P. Kozlitin. Wavelength switching in a krypton laser. IN: Sb. 1, 28-30. (RZhRadiot, 1/72, #1D374)

c. N_2

83. Kasymdzhanov, M. A., and V. I. Ovchinnikov. Nonlinear amplification of light in an N_2 amplifier. ZhPS, v. 16, no. 2, 1972, 243-248.

84. Knyazev, I. N. Study of physical processes of pulsed gas discharge lasers based on molecular hydrogen and deuterium, and of the first positive system of nitrogen molecule bands. IN: Tr. 20, 119-190.

85. Ravodina, O. V., A. A. Yeliseyev, and T. N. Popova. Relative populations of vibrational levels for the nitrogen $B^3\pi_g$ state in a glow discharge. IVUZ Fiz, no. 2, 1972, 64-68.

d. Metal Vapor

86. Bazarov, Ye. N., V. D. Biketov, V. P. Gubin, and Ya. A. Yuzhvidin. Effect of a buffer gas on operation of an optically pumped Rb^{87} vapor laser. RiE, no. 3, 1972, 556-564.

87. Mishakov, G. A., A. I. Pikhtelev, Yu. M. Sapozhnikov, and A. A. Ul'yanov. Analyzing a method of filling cells for a quantum frequency standard based on Rb^{87} vapor. IVUZ Radiofiz, no. 1, 1972, 27-32

88. Vernyy, Ye. A., L. D. Mash, and B. M. Rabkin. C-w generation in the cadmium 4416A ion line under high-frequency excitation. ZhPS, v. 16, no. 1, 1972, 156-157.

e. H_2O

89. Kukhta, A. V. Laser at a 27.9 micron wavelength. PTE, no. 6, 1971, 143-145.

f. Gasdynamic

90. Gembarzhevskiy, G. V., N. A. Generalov, G. I. Kozlov, and D. I. Roytenburg. Amplification factor of light in a CO_2+N_2+He mixture upon expansion in a supersonic nozzle. ZhETF, v. 62, no. 3, 1972, 844-847.

91. Yushchenkova, N. I., and Yu. A. Kalenov. Chemical and vibratory relaxation in ultrasonic flows of carbon dioxide with trace nitrogen. ZhPS, v. 16, no. 1, 1972, 39-44.

g. Miscellaneous

92. Bobovich, Ya. S. Present devices for exciting spontaneous Raman scattering spectra. ZhPS, v. 16, no. 3, 1972, 557-574.

93. Orlov, L. N. Calculating the temperature field of gas-flow molecular lasers. ZhPS, v. 16, no. 3, 1972, 437-442.

94. Ovchinnikov, A. A., and N. S. Erikhman. Vibrational energy relaxation in molecular crystals. ZhETF, v. 61, no. 6, 1971, 2391-2400.

95. Podlubnyy, L. I. Theory of relaxation and translation processes in molecular gases. II. ZhETF, v. 62, no. 2, 1972, 593-605.

96. Smirnov, Yu. M., and Yu. D. Sharonov. Excitation of Ne III spectral lines. OiS, v. 32, no. 3, 1972, 624-626.

97. Sutovskiy, V. M. Detection and study of stimulated emission in a pinch discharge. IN: Tr. 20, 66-118.

3. Ring Lasers

98. Bidikhov, S. A., P. S. Landa, and Ye. G. Lariontsev. Regimes of intensity self-oscillations and phase differences of opposed waves in gas ring lasers. IN: Sb. 19, 92-99. (RZhF, 1/72, #1Zh65)

99. Fradkin, E. Ye. Diffraction splitting of opposed-wave frequencies in a gas ring laser. II. OiS, v. 32, no. 1, 1972, 132-142.

100. Gurevich, G. L., and V. M. Paskhin. Steady-state mode -locked regime in a laser with saturable absorber. IVUZ Radiofiz, no. 2, 1972, 221-226.

101. Korzhenevich, I. M., A. M. Ratner, and V. S. Solov'yev. Separating the fundamental transverse mode of a ring resonator. IN: Sb. 8, 94-97.

102. Kravchenko, V. I. A traveling wave laser. Otkr izobr, no. 3, 1972, #325660.

103. Kruglik, G. S., A. A. Kutsak, and G. M. Kuznetsov. Effect of noise excitation on parametric resonance in a ring laser. ZhPS, v. 16, no. 1, 1972, 58-67.

104. Landa, P. S. Some performance features of a ring laser using a mixture of active gas isotopes. OiS, v. 32, no. 2, 1972, 383-387.

105. Zhelnov, B. L., and G. I. Smirnov. Gas ring laser with a naturally active cell. OiS, v. 32, no. 2, 1972, 388-391.

4. Theory

106. Baklanov, Ye. V., and V. P. Chebotayev. Theory of interaction between a standing wave field and a gas. ZhETF, v. 62, no. 2, 1972, 541-550.

107. Beterov, I. M., Yu. Ye. Kuz'min, and V. P. Chebotayev. Polarization of emission in a three-level gas laser. OiS, v. 32, no. 1, 1972, 220-222.

108. Borovich, B. L. Feasibility of designing gas lasers with optical pumping using allowed electron transitions in molecules. ZhETF, v. 61, no. 6, 1971, 2293-2297.

D. CHEMICAL LASERS

1. D_2-F_2-CO_2

109. Basov, N. G., S. I. Zavorotnyy, Ye. P. Markin, A. I. Nikitin, and A. N. Orayevskiy. High pressure pulsed chemical laser using a mixture of D_2+F_2+CC_2. ZhETF P, v. 15, no. 3, 1972, 135-137.

110. Koshelev, Ye. L. A c-w chemical laser. Priroda, no. 2, 1972, 105.

2. H_2-F_2

111. Dolgov-Savel'yev, G. G., and A. A. Podminogin. Population of HF vibration-rotation levels during an elementary act of the F_2+H_2 reaction. OiS, v. 32, no. 1, 1972, 214-216.

112. Fedotov, V. G., and A. M. Chaykin. Study of the "cold" flame reaction of fluorine with hydrogen in a flow. DAN SSSR, v. 203, no. 2, 1972, 406-408.

3. HCl

113. Ambartsumyan, R. V., V. M. Apatin, and V. S. Letokhov. Selective laser excitation of high vibrational levels in HCl molecules. ZhETF P, v. 15, no. 6, 1972, 336-339.

4. Photodissociative

114. Bashkin, A. S., A. N. Orayevskiy, and N. N. Yuryshev. Feasibility of designing a c-w laser based on photorecombination of radicals and atoms. IN: Sb. 8, 89-91.

115. Filyukov, A. A., and V. Ya. Karpov. Criterion of probable generation quenching. ZhETF, v. 62, no. 1, 1972, 119-124.

116. Gavrilina, L. K., V. Ya. Karpov, Yu. S. Leonov, V. A. Sautkin, and A. A. Filyukov. Effect of selective pumping in a photodissociative laser. ZhETF, v. 62, no. 2, 1972, 485-489.

117. Orayevskiy, A. N., V. P. Pimenov, and V. A. Shcheglov. Photochemical waves in gases. ZhETF, v. 62, no. 1, 1972, 89-99.

5. Theory

118. Arutyunov, V. S., and A. M. Chaykin. Measuring the vibrational relaxation probability of HF^+ molecules from collisions with H_2, N_2, Ar and HF. Kinetika i kataliz, no. 1, 1972, 26-28.

119. Kochelap, V. A., and Yu. A. Kukibnyy. Possibility of amplifying infrared radiation by a high pressure reactive gas. UFZh, no. 1, 1972, 149-151.

120. Kochelap, V. A. Negative absorption of light in a dense ionized gas. ZhTF, no. 2, 1972, 449-451.

121. Zaslonko, I. S., S. M. Kogarko, and Ye. V. Mozzhukhin. Occurrence of vibrational-vibrational exchange in exothermal decomposition reactions. Kinetika i kataliz, no. 1, 1972, 29-32.

122. Zaslonko, I. S., S. M. Kogarko, Ye. V. Mozzhukhin, and A. I. Demin. Feasibility of obtaining population inversion in exothermic decomposition reactions. DAN SSSR, v. 202, no. 5, 1972, 1121-1124.

E. U-V LASERS

123. Mestechkin, M. M. Features of excited states of organic scintillators used in ultraviolet lasers. OiS, v. 32, no. 2, 1972, 355-361.

124. Molchanov, A. G. Lasers in the vacuum ultraviolet and x-ray regions of the spectrum [theoretical possibilities] UFN, v. 106, no. 1, 1972, 165-173.

F. COMPONENTS

1. Resonators

a. Design and Performance

125. Anan'yev, Yu. A. Unstable resonators and their applications (review). IN: Sb. 8, 3-34.

126. Balashov, I. F., B. G. Berezin, and B. A. Yermakov. Features of generating single pulse emission during noninstantaneous switching of a laser resonator. ZhTF, no. 2, 1972, 385-390.

127. Chekalinskaya, Yu. I., G. P. Ledneva, and Ye. P. Chechenina. Frequency-polarization characteristics of sectioned resonators and laser amplifiers. IN: Sb. 15, 552-618. (RZhF, 1/72, #1D1162)

128. Dianov, Ye. M. Thermal distortions in a laser resonator using a rectangular garnet rod. KSpF, no. 8, 1971, 67-74. (RZh -Radiot, 1/72, #1D352)

129. Drozdov, M. M., and V. I. Matveyev. Effect of resonator misalignment on the power output of gas lasers. IVUZ Geodeziya i aerofotos"yemka, no. 5, 1970, 125-128.

130. Kazanskiy, V. B., L. N. Litvinenko, and S. L. Prosvirnin. Theory of a Fabry-Perot interferometer with mirrors in the form of a plane lattice for an inclined incident wave. OiS, v. 32, no. 3, 1972, 592-600.

131. Kiselev, V. A. Diffraction losses in optical resonators with cylindrical mirrors. RiE, no. 2, 1972, 247-255.

132. Kovalenko, Ye. S., L. I. Shangina, and T. N. Babchenko. Azimuthal inhomogeneities in pump distribution in an elliptical illuminator. ZhPS, v. 16, no. 2, 1972, 274-278.

133. Ostapchenko, Ye. P., G. S. Sedov, S. A. Smorchkova, and A. F. Stepanov. Shift of the optical axis in lasers from misalignment of a resonator mirror. IN: Sb. 18, no. 3(23), 1971, 22-28. (RZhRadiot, 1/72, #1D311)

134. Pankratov, V. A., and V. A. Stepovoy. Technology for manufacturing an SHF resonator lattice. IN: Sb. 8, 135-136.

135. Popov, M. M. Integral equations for open resonators filled with an inhomogeneous medium. OiS, v. 32, no. 2, 1972, 421-424.

136. Troitskiy, Yu. V. Laser resonator. Otkr izobr, no. 4, 1972, #326677.

137. Vinokurov, G. N., V. V. Lyubimov, I. B. Orlova, and V. F. Petrov. Approximate calculation of oscillations in open resonators with convex mirrors. IN: Tr. 8, 72-81. (RZhMekh, 12/71, #12B267)

138. Yepishin, V. A., A. V. Lytov, and V. V. Kamyshan. Open resonators with plane mirrors having periodically placed absorption bands. IN: Tr. 8, 91-103. (RZhMekh, 12/71, #12B273)

b. Mode Kinetics

139. Khapalyuk, A. P., and A. S. Rudnitskiy. Intrinsic types of oscillations in a two-dimensional open resonator. IN: Sb. 15, 490-551. (RZhF, 1/72, #1D1161)

140. Kiselev, V. A. Diffraction losses of radiation in optical cavities with round spherical mirrors. OiS, v. 32, no. 1, 1972, 143-149.

141. Klinkov, V. K., and Ch. K. Mukhtarov. Effect of redistribution of energy density in a resonator on laser generation. ZhETF, v. 61, no. 6, 1971, 2248-2258.

142. Korolenko, P. V. Amplification saturation of higher order modes in an active Fabry-Perot interferometer. VMU, no. 1, 1972, 125-128.

143. Korolenko, P. V., and N. E. Sarkarov. Excitation of natural modes in a Fabry-Perot resonator by an external laser beam. ZhPS, v. 16, no. 3, 1972, 430-436.

2. Q-Switches

144. Aver'yanov, G. A., S. V. Yevdokimov, Ye. V. Nilov, B. M. Savichev, and A. A. Chertkov. Pulse generator for controlling a low voltage Pockels cell. IN: Sb. 8, 133-135.

145. Kostin, N. N., V. A. Khodovoy, and N. A. Chigir'. Passive Q-switching and frequency stabilization of a neodymium glass laser by means of molecular cesium vapor. OiS, v. 32, no. 3, 1972, 585-588.

146. Marugin, A. M., and V. M. Ovchinnikov. Effect of electrode location and of the structure of a z-cut KDP crystal on magnitude of the control voltage for an electrooptic switch. OMP, no. 1, 1972, 6-7.

147. Zakharov, N. P. Synchronization diagram for a laser with optico-mechanical switching. OMP, no. 2, 1972, 28-30.

3. Pump Sources

148. Anikiyev, Yu. G., G. G. Vdovchenko, M. Ye. Zhabotinskiy, and I. S. Marshak. Gas discharge flashlamp with a rectangular cross-section. OiS, v. 32, no. 2, 1972, 392-395.

149. Aver'yanov, G. A., S. V. Yevdokimov, and O. P. Kuzovlev. Control diagram for the power supply of a laser pump lamp. IN: Sb. 8, 131-133.

150. Bobruskin, I. D., L. V. Velichkin, L. V. Karklit, A. K. Savenko, and Ye. N. Tverdokhlebov. Stabilized power source for the DRSh and DKsSh flashlamps. PTE, no. 6, 1971, 129-130.

151. Bogdankevich, O. V., and J. M. Olikhov. Electron accelerator with preliminary bunching of the electron beam for semiconductor laser pumping. Laser /East Germany/, v. 3, no. 2, 1971, 58. (RZhRadiot, 1/72, #1D255)

152. Borisenko, N. D., F. F. Kodzhespirov, N. I. Savvin, and V. F. Fil'. Arc current stabilizer for a xenon lamp. ZhPS, v. 16, no. 1, 1972, 163-164.

153. Brodskiy, Yu. D., P. G. Valuyskiy, and D. M. Shcherbina. Radiation stabilizer for superhigh pressure xenon lamps. IN: Tr. 23, no. 110, 1971, 101-107. (LZhS, 4/72, #11338)

154. Demenik, I. V., N. A. Kozlov, V. Ye. Mnuskin, and V. G. Osadchenko. Study of the effectiveness of powerful tubular flashlamps by the luminescence of the active element. ZhPS, v. 16, no. 3, 1972, 462-466.

155. Dzyubenko, M. I., A. Ya. Matveyev, and I. G. Naumenko. Coaxial flashlamp for pumping organic dye solutions. PTE, no. 1, 1972, 171-173.

156. Martsinkovskiy, Yu. A. High intensity, high pressure mercury capillary flashlamp with trace amounts of potassium, sodium and rubidium vapor. ZhPS, v. 16, no. 3, 1972, 555-556.

157. Naydenov, V. A. Microsecond light source using a nitrogen flashlamp. PTE, no. 6, 1971, 148-150.

158. Nikolayevskiy, V. G., V. D. Pis'mennyy, and A. T. Rakhimov. Initial stage of an electric discharge in xenon at high pressure. ZhTF, no. 2, 1972, 364-366.

159. Ronkin, Zh. M., and L. A. Stroganova. Ultraviolet pulsed high speed light generators for stimulating bioluminescence. PTE, no. 6, 1971, 150-152.

4. Deflectors

160. Arkhipov, V. K., Ye. I. Yershov, and R. P. Tarasov. Electrooptical deflection of a laser beam with multiple use of the deflecting element volume. RiE, no. 1, 1972, 94-102.

5. Filters

161. Dreyden, G. V., Yu. I. Ostrovskiy, and V. S. Sukhorukikh. Spatial filtering of interfering waves. OiS, v. 32, no. 1, 1972, 227.

162. Konyukhov, G. P., and Ye. A. Nesmelov. Enhancing the transparency of a Fabry-Perot narrowband optical filter. OiS, v. 32, no. 3, 1972, 601-606.

163. Lazareva, L. D., and Ye. A. Nesmelov. Effect of heat treatment on the position of transparency maximum in interference filters. ZhPS, v. 16, no. 1, 1972, 143-147.

164. Solc, I. Birefringent filters with matched transmission peaks. Jemna mechanika a optika, no. 6, 1971, 159-161.

165. Vinogradova-Smirnova, T. A. Controllable dispersion interference -polarized filters. OiS, v. 32, no. 1, 1972, 184-187.

6. Mixers

166. Bakumenko, V. M., and A. P. Antipenko. Single-band optical mixer. RiE, no. 2, 1972, 340-344.

7. Detectors

167. Afinogenov, V. M., and V. I. Trifonov. Low-inertia millimeter radiation detector based on n-InSb. PTE, no. 6, 1971, 114-116.

168. Alfyorov, Zh. I., V. M. Andreyev, D. Z. Garbuzov, Ye. P. Morozov, Ye. L. Portnoy, V. G. Trofim, and V. B. Khalfin. Current flow mechanisms under electroluminescence of p-GaAs --n-$Al_xGa_{1-x}As$. FTP, no. 2, 1972, 366-375.

169. Aver'yanova, T. V., V. L. Bakumenko, M. N. Zargar'yants, L. N. Kurbatov, and Yu. S. Mezin. Photoluminescence of a GaAs:Zn, Ge--GaAs:Ge p-n junction. FTP, no. 2, 1972, 376-380.

170. Drikker, A. S., and R. R. Krasovskiy. Optimal energy-sensitive reception of a partially polarized optical signal. Problemy peredachi informatsii, no. 1, 1972, 100-103.

171. Dushkov, I. I., N. V. Karlov, B. B. Krynetskiy, V. A. Mishin, and R. P. Petrov. Use of the reciprocity theory for studying antenna characteristics of superheterodyne photoreceivers. RiE, no. 2, 1972, 345-350.

172. F-14 photocell. PTE, no. 6, 1971, 198.

173. F-18 photocell. PTE, no. 6, 1971, 196.

174. Garin, B. M., and V. I. Stafeyev. Effect of light on static volt-ampere characteristics of a "long" diode. FTP, no. 1, 1972, 78-83.

175. Gutkin, A. A., M. B. Kagan, A. A. Lebedev, B. A. Kholev, and T. A. Shaposhnikova. Nonadditive photoeffect under combined excitation in GaAs p-i-n-structures. FTP, no. 2, 1972, 237-241.

176. Gutkin, A. A., D. N. Nasledov, and F. E. Faradzhev. Polarization effects under electroabsorption in GaAs p-si-n -structures. FTP, no. 2, 1972, 393-396.

177. Ivakhno, V. N. Quantum yield of internal photoeffect and shock ionization in PbS. FTT, no. 2, 1972, 578-580.

178. Kovtonyuk, N. F., P. A. Bogomolov, A. A. Magomedov, and O. I. Kupchinskiy. Recording of radiation by an MDSDM (metal -dielectric-semiconductor-dielectric-metal) structure. FTP, no. 1, 1972, 166-168.

179. Kovtonyuk, N. F., V. A. Morozov, V. V. Nikitin, and Yu. M. Popov. Amplifying a photosignal in metal-dielectric-semiconductor-dielectric-metal /MDSDM/ structures. IN: Sb. 8, 113-114.

180. Kudryashov, V. A., I. N. Matveyev, A. A. Nosov, and S. M. Pshenichnikov. Laws of noise distribution in photodetectors with avalanche photodiodes. PTE, no. 1, 1972, 177-178.

181 Lyutovich, K. L., L. N. Strel'tsov, and A. S. Lyutovich. Some photoelectric properties of epitaxial layers in Si_xGe_{1-x} solid solutions. FTP, no. 1, 1972, 199-201.

182. Marova, S. N. Detection of weak signals in the optical wave range. IN: Tr. 24, 198-208. (RZhRadiot, 11/71, #11D563)

183. Popov, Yu. V., I. A. Kobak, A. F. Shilov, and V. B. Volkonskiy. Method for phase detection. Author's certificate USSR, #290398, published April 3, 1971. (RZhRadiot, 11/71, #11D614)

184. Zuyev, V. N., A. N. Ioshchenko, Ye. F. Kvashnin, and V. L. Savinykh. A device for coherent reception of wide-band orthogonal signals. IN: Tr. 25, 15-20. (RZhRadiot, 2/72, #2D466)

8. Modulators

185. Angert, M. B., O. F. Butyagin, V. P. Zorenko, and V. P. Klyuyev. Temperature of phase lock in $LiNbO_3$ and $Ba_2NaNb_5O_{15}$ crystals when adding two wave frequencies. ZhPS, v. 16, no. 3, 1972, 522-524.

186. Basov, N. G., P. D. Berezin, L. M. Blinov, I. N. Kompanets, V. N. Morozov, and V. V. Nikitin. Phase modulation of coherent light by means of liquid crystals. ZhETF P, v. 15, no. 4, 1972, 200-203.

187. Borisov, A. Yu., A. I. Gorelik, and A. V. Fal'tsman. Use of the OLMSh-100M electrooptical light modulator with a nonlaser light source. PTE, no. 1, 1972, 174-176.

188. Chirkov, L. Ye. Invariance method for calculating electrooptical light modulators. VMU, no. 1, 1972, 19-27.

189. Dianova, V. A., A. N. Izrailenko, A. S. Lipatov, V. N. Parygin, and L. N. Rashkovich. Electrooptical effect in α-HIO_3 and $(NH_4)_2C_2O_4 \cdot H_2O$ /crystals/. Kristal, no. 1, 1972, 223-224.

190. Dianova, V. A., R. A. Movsesyan, V. N. Parygin, and V. A. Papyan. Modulating helium-neon laser radiation by lithium niobate crystals. Geodeziya i kartografiya, no. 1, 1972, 32-36.

191. Dolgopyatov, R. M., B. N. Makoimenko, and S. A. Smolyanskiy. Spectral composition of laser emission modulated by shf oscillation. IN: Sb. 21, 15-27. (RZhF, 1/72, #1Zh72)

192. Gisin, B. V. Sections of lithium niobate crystal as optical modulators with low half-wave voltage. IN: Sb. 8, 136-137.

193. Glinskiy, G. F., A. N. Pikhtin, and D. A. Yas'kov. Linear electrooptic effect in gallium phosphide. FTT, no. 2, 1972, 350-353.

194. Gorelik, A. I., A. V. Fal'tsman, and S. G. Shvedov. Modulator-beam splitter in dual-beam spectrophotometry. PTE, no. 6, 1971, 155- 156.

195. Goykhman, A. Ya., and V. N. Kalinin. Some features of using the Franz-Keldysh effect for modulating light and recording ultrashort electric pulses. VMU, no. 1, 1972, 130-131.

196. Kalinchuk, B. A., and V. P. Plastro. Electrooptic modulators for weak signals at subsonic frequencies. IN: Tr. 23, no. 126, 1971, 184-188. (LZhS, 5/72, #14814)

197. Luk'yanov, D. P., and A. D. Pupov. Experimental study of the interaction of circularly polarized light with modulating waves in a medium with a square-law electrooptic effect. RiE, no. 3, 1972, 565-568.

198. Sokolov, V. I., and V. K. Subashiyev. Linear electrooptical effect in gallium selenide. FTT, no. 1, 1972, 222-228.

199. Tatasov, K. I., and K. N. Chikov. An interference method for amplitude modulation of radiation. Otkr izobr, no. 7, 1972, #329409.

200. Tron'ko, V. D. Ferromagnetic (and yttrium) garnet Faraday optical modulator. IVUZ Priboro, no. 1, 1972, 125-129.

201. Voronin, V. A., and N. Sh. Khaykin. Strip electrooptical modulator with a range up to 1 GHz. PTE, no. 6, 1971, 153-155.

G. NONLINEAR OPTICS

1. Frequency Conversion

202. Andreyev, R. B., and V. D. Volosov. Some features of second harmonic generation in a dual frequency laser. ZhPS, v. 16, no. 2, 1972, 363-364.

203. Bass, F. G., and V. G. Sinitsyn. Nonstationary theory of second harmonic generation. UFZh, no. 1, 1972, 124-129.

204. Bokut', B. V., N. S. Kazak, A. G. Mashchenko, V. A. Mostovnikov, and A. N. Rubinov. Generating powerful radiation with spectral tuning in the 280-385 nm range. ZhETF P, v. 15, no. 1, 1972, 26-30.

205. Borshchevskiy, A. S., V. S. Grigor'yeva, Yu. K. Undalov, and T. V. Upatova. Optical anisotropy of the $A^{II}B^{IV}C_2^V$ compounds. FTP, no. 2, 1972, 396-398.

206. Davydov, B. L., V. V. Dunina, V. F. Zolin, L. G. Koreneva, M. A. Samokhina, and E. P. Shliteris. Second harmonic generation in ruby laser radiation by organic crystals. OiS, v. 32, no. 1, 1972, 225-227.

207. Isyanova, Ye. D., and V. M. Ovchinnikov. Generation of single pulses in a resonator converting emission to the second harmonic. OiS, v. 32, no. 1, 1972, 168-173.

208. Koval'chuk, V. M., and Z. B. Perekalina. Second harmonic generation in dithionate crystals. Kristal, no. 2, 1972, 414-415.

209. Lebedev, I. V. Generation of harmonics due to electron retardation in the presence of an intense light wave. OiS, v. 32, no. 1, 1972, 120-124.

210. Norinskiy, L. V. Frequency dependence of spatial synchronism of neodymium emission harmonics. OiS, v. 32, no. 2, 1972, 379-382.

211. Novikov, M. A., S. S. Fridman, and I. G. Yavorovskiy. Dispersion of optical activity in lithium niobate crystals. IVUZ Radiofiz, no. 2, 1972, 308-309.

212. Tikhonov, Ye. A., and M. T. Shpak. Second harmonic generation in a neodymium laser by crystalline powders of organic compounds. UFZh, no. 2, 1972, 190-202.

2. Stimulated Scattering

a. Raman

213. Akhmanov, S. A., K. N. Drabovich, A. P. Sukhorukov, and A. K. Shchednova. Combined effects of molecular relaxation and medium dispersion during stimulated Raman scattering of ultrashort light pulses. ZhETF, v. 62, no. 2, 1972, 525-540.

214. Akhmanov, S. A., B. V. Zhdanov, A. I. Kovrigin, and S. M. Pershin. Effective stimulated scattering in the UV range, and amplification dispersion in the 0.26--1.06μ range. ZhETF F, v. 15, no. 5, 1972, 266-269.

215. Apanasevich, P. A., A. A. Afanas'yev, V. A. Orlovich, and V. N. Rusak. Some features of stimulated Raman scattering in a laser resonator. ZhPS, v. 16, no. 2, 1972, 256-261.

216. Arbatskaya, A. N., K. A. Prokhorov, and M. M. Sushchinskiy. Study of the angular distribution of the first Stokes component in stimulated Raman scattering. ZhETF, v. 62, no. 3, 1972, 872-878.

217. Bozhkov, A. I. Stimulated optical scattering on a liquid surface at full Fresnel reflection. IVUZ Radiofiz, no. 2, 1972, 233-241.

218. Korolev, F. A., Z. A. Baskakova, and B. V. Smirnov. The self-focusing effect and its influence on spatial characteristics of stimulated Raman scattering in certain liquids. OiS, v. 32, no. 2, 1972, 373-378.

219. Korolev, F. A., L. S. Gulyayeva, and Ye. Yu. Sokolova. Excitation of stimulated Raman scattering in nitrogen using a resonator. OiS, v. 32, no. 3, 1972, 518-521.

220. Zel'dovich, B. Ya. Build-up time for a stationary regime of stimulated light scattering. ZhETF P, v. 15, no. 4, 1972, 226-228.

b. Brillouin

221. Al'tshuler, S. A., R. M. Valishev, B. I. Kochelayev, and A. Kh. Khasanov. Study of a phonon system by Brillouin scattering of light under conditions of paramagnetic resonance saturation. ZhETF, v. 62, no. 2, 1972, 639-651.

222. Aslanyan, V. M., and A. K. Dadivanyan. Stimulated Brillouin scattering in polymer solutions. Vysokomolekulyarnyye soyedineniya. Kratkiye soobshcheniya, no. 1, 1972, 38-40.

223. Gangardt, M. G., A. Z. Grasyuk, and I. G. Zubarev. Stimulated thermal scattering and Brillouin scattering in liquid nitrogen and oxygen. IN: Sb. 8, 118-122.

224. Zel'dovich, B. Ya., V. I. Popovichev, V. V. Ragul'skiy, and F. S. Fayzullov. Coupling between wave fronts of reflected and excitation light under stimulated Brillouin scattering. ZhETF P, v. 15, no. 3, 1972, 160-164.

3. Self-focusing

225. Aleshkevich, V. A., A. V. Migulin, A. P. Sukhorukov, and E. N. Shumilov. Aberration and limiting divergence of c-w laser radiation in defocusing media. ZhETF, v. 62, no. 2, 1972, 551-561.

226. Petrishchev, V. A., and V. I. Talanov. Nonstationary self-focusing of light. IN: Sb. 8, 35-42.

227. Zakharov, V. Ye., V. V. Sobolev, and V. S. Synakh. Destruction of a monochromatic wave in a medium with inertialess nonlinearity. ZhPMTF, no. 1, 1972, 92-97.

4. Acoustic Interaction

228. D'yakonov, A. M., Yu. V. Ilisavskiy, and L. A. Kulakova. Study of acoustoelectric instability in CdS by optical scattering in sound. FTT, no. 1, 1972, 95-103.

229. Golenishchev-Kutuzov, V. A., U. Kh. Kopvillem, M. I. Pirozhkov, and B. P. Smolyakov. Photon and phonon spin induction and echo under null-frequency sound excitation. IN: Tr. 9, 5-8. (RZhF, 1/72, #1Zh747)

230. Kludzin, V. V., S. V. Kulakov, B. P. Razzhivin, and G. K. Ul'yanov. Feasibility of using heavy flints for ultrasonic modulation of light. OMP, no. 1, 1972, 3-6.

231. Kravchenko, V. Ya. Quantum effects during electromagnetic excitation of sound in semimetals. ZhETF, v. 62, no. 1, 1972, 377-384.

232. Pushkina, N. I., and R. V. Khokhlov. Stimulated Raman scattering of sound in piezoelectrics. DAN SSSR, v. 203, no. 2, 1972, 318-319.

5. Birefringence

233. Aleshechkin, V. N., V. V. Meriakri, Yu. M. Poplavko, and Ye. F. Ushatkin. Application of anisotropic ferroelectrics at submillimeter wavelengths. RiE, no. 1, 1972, 209-211.

234. Chorvatova, Z. Spectrographic measurement of temperature dependence of birefringence in ADP and corundum crystals. Ceskoslovensky casopis fysika, v. A21, no. 5, 1971, 483-488. (RZhF, 2/72, #2D1178)

6. General Theory

235. Aben, Kh. K., and A. Yu. Saar. Experimental study of optical systems described by a unitary matrix. OiS, v. 32, no. 1, 1972, 196-201.

236. Belyayev, Yu. N., and G. I. Freydman. Spatial trapping of parametrically amplified optical waves in KDP. ZhETF P, v. 15, no. 5, 1972, 237-241.

237. Dyshko, A. L., V. N. Lugovoy, and A. M. Prokhorov. Multifocus structure of a light beam in a nonlinear medium. ZhETF, v. 61, no. 6, 1971, 2305-2318.

238. Gayner, A. V., G. V. Krivoshchekov, S. V. Kruglov, V. V. Lebedev, and S. I. Marennikov. Study of an image converter system with large angular aperture. IN: Sb. 8, 122-124.

239. Gross, Ye. F., A. G. Plyukhin, L. G. Suslina, and Ye. B. Shadrin. Luminescence and resonant Raman scattering in $Zn_xCd_{1-x}Te$ crystals. ZhETF P, v. 15, no. 6, 1972, 312-316.

240. Khokhlov, R. Marvels of nonlinear optics. Science and engineering. APN newsletter. Novosti press agency, no. 8, 1972, 9-12.

241. Kostin, N. N., M. P. Sokolova, V. A. Khodovoy, and V. V. Khromov. Nonlinear absorption of ruby laser radiation by molecular rubidium vapor. ZhETF, v. 62, no. 2, 1972, 475-484.

242. Nemes, G. Problems of nonlinear optics. Studii si cercetari fizica, v. 23, no. 4, 1971, 417-436. (RZhF, 1/72, #1D1107)

243. Nikishov, A. I. Effect of a constant electric field on multiphoton ionization. ZhETF, v. 62, no. 2, 1972, 562-568.

244. Yemel'yanov, V. I., and Yu. L. Klimontovich. Theory of parametric scattering of light by polaritons. ZhETF, v. 62, no. 2, 1972, 778-788.

245. Zege, E. P. Light propagation in a medium with optical characteristics dependent on radiation density. IN: Sb. 3, 135-158. (RZhF, 2/72, #2D1258)

H. SPECTROSCOPY OF LASER MATERIALS

246. Arkhipenko, D. K., A. A. Godovikov, S. N. Nenasheva, B. G. Nenashev, B. A. Orekhov, V. S. Pavlyuchenko, and M. G. Serbulenko. Vibrational spectrum of isomorphous series of proustite-pyrargyrite. IN: Sb. 8, 69-77.

247. Arsen'yev, P. A., D. T. Sviridov, and R. K. Sviridova. Spectra of rare earth garnets containing ions of iron. Kristal, no. 2, 1972, 412-414.

248. Bagdasarov, Kh. S., G. A. Bogomolova, M. M. Gritsenko, A. A. Kaminskiy, and A. M. Kevorkov. Spectroscopic studies of an $LaAlO_3$--Nd^{3+} laser crystal. Kristal, no. 2, 1972, 415-417.

249. Baronov, G. S., N. P. Yegorov, A. N. Sopikov, and B. B. Chayvanov. Vibrational spectra of complex xenon difluoride compounds. I. Raman spectra of $2XeF_2 \cdot SbF_5$; $XeF_2 \cdot SbF_5$; $2XeF_2 \cdot 3SbF_5$; and $XeF_2 \cdot 2SbF_5$. Zhurnal fizicheskoy khimii, no. 1, 1972, 18-22.

250. Bugay, A. A., O. G. Duliu, V. M. Maksimenko, and Yu. B. Shevchenko. Temperature change in EPR line splitting of the Cr^{3+} ion in $ZnWO_4$ in an external electric field. FTT, no. 2, 1972, 572-573.

251. Burakov, V. S., L. N. Orlov, V. N. Snopko, V. A. Tolkachev, and A. A. Yankovskiy. XVII All-Union congress on spectroscopy / July 5-9, 1971/. ZhPS, v. 16, no. 1, 1972, 181-185.

252. Chervetsova, I. N., V. N. Doroshenko, I. B. Slinyakova, and L. N. Ganyuk. Luminescence method for studying the interaction of anthracene with polyorganosiloxane adsorbents and aerosols. ZhPS, v. 16, no. 1, 1972, 85-89.

253. Dmitrenko, N. N. Dependency of atomic spectral line intensity for iron, chrome and silicon dopants on the melting points of a CaF_2 - Al_2O_3 system. ZhPS, v. 16, no. 1, 1972, 148-149.

254. Dvornikov, D. P., Yu. I. Maksimov, S. L. Pyshkin, and S. I. Radautsan. Luminescence of GaP:Bi single crystals under two-photon excitation. FTP, no. 1, 1972, 64-67.

255. Kazanskiy, A. G., and O. G. Koshelev. Cyclotron resonance of electrons in silicon generated by impurity excitation from a CO_2 laser. FTP, no. 2, 1972, 254-260.

256. Lavrik, N. L., and Yu. I. Naberukhin. Effect of refractive index on intensity of Raman scattering under standard illumination conditions in the DFS-12 spectrometer. ZhPS, v. 16, no. 3, 1972, 533-536.

257. Lekhotski, E., E. Balint, Ya. Kheveshi. Effect of temperature on migration of excitational energy in model systems. ZhPS, v. 16, no. 1, 1972, 97-103.

258. Levshin, L. V., T. D. Slavnova, and V. I. Yuzhakov. Spectroscopic study of associative features of rhodamine dye molecules under low temperatures. ZhPS, v. 16, no. 1, 1972, 90-96.

259. Ostrovskaya, Ye. M., S. A. Sazonova, and B. S. Skorobogatov. Temperature broadening of the levels of the $^4I_{9/2}$, $^4F_{3/2}$ and $^2P_{1/2}$ terms of the Nd^{3+} ion in YAG crystals. IN: Sb. 14, 128-134. (LZhS, 3/72, #7272)

260. Ostrovskaya, Ye. M., S. A. Sazonova, and B. S. Skorobogatov. Temperature broadening of the luminescence lines of the $^4F_{3/2}$ $^4I_{11/2}$ group of the Nd^{3+} ion in YAG crystals. IN: Sb. 14, 135-139. (LZhS, 3/72, #7271)

261. Pelant, I. Two-photon absorption in solids. Ceskoslovensky casopis fysika, v. A21, no. 3, 1971, 300-314. (RZhF, 1/72, #1D1123)

262. Pukhonin, V. V., and A. S. Chaykin. Spectral radiative capability of LiF, CaF_2, NaCl and fused quartz crystals in the 2-25 micron range. ZhPS, v. 16, no. 1, 1972, 138-142.

263. Reshina, I. I. Spectrum of long-wave optical lattice vibrations in vanadium pentoxide. FTT, no. 2, 1972, 345-349.

264. Venetskiy, A. The laser as criminologist. Nauka i zhizn', no. 1, 1972, 17.

265. Vodop'yanov, L. K., Ye. A. Vinogradov, A. M. Blinov, and V. A. Rukavishnikov. Optical phonons in $Zn_xCd_{1-x}Te$ mixed crystals. FTT, no. 1, 1972, 268-270.

266. Vylegzhanin, D. N., and A. A. Kaminskiy. Study of electron -phonon interaction phenomena in LaF_3 - Nd^{3+} crystal. ZhETF, v. 62, no. 2, 1972, 685-700.

267. Zharikov, N. K., and V. S. Korobkov. Using a laser to produce Raman spectra in polycrystalline organic compounds. IN: Sb. 20, 161-176. (RZhKh, 19ABV, 5/72, #5B249)

J. ULTRASHORT PULSE GENERATION

268. Il'ichev, N. N., V. V. Korobkin, V. A. Korshunov, A. A. Malyutin, T. G. Okroashvili, and P. P. Pashinin. Superbroadening of an ultrashort pulse spectrum in liquids and glass. ZhETF P, v. 15, no. 4, 1972, 191-194.

269. Lugovoy, V. N., and A. M. Prokhorov. Feasibility of generating ultrashort light pulses in laser materials with a narrow luminescence line. ZhETF P, v. 15, no. 1, 1972, 70-72.

270. Zel'dovich, B. Ya., and T. I. Kuznetsova. Generating ultrashort light pulses by lasers. UFN, v. 106, no. 1, 1972, 47-84.

K. CRYSTAL GROWING

271. Avayeva, I. G., V. B. Kravchenko, and T. N. Kobyzeva. Growth and study of $NaIn(WO_4)_2$ single crystals. NM, no. 3, 1972, 586-587.

272. Bal'va, O. P., O. M. Konovalov, M. B. Kosmyna, and Ye. N. Pirogov. Effect of gradient and zone-diffusion annealing on the distribution of inclusions in YIG single crystals. IN: Sb. 14, 25-33. (LZhS, 3/72, #7174)

273. Konovalov, O. M., M. B. Kosmyna, L. L. Nagornaya, and S. F. Prokopovich. Radiographic study of solution-fused media applicable to YIG single crystal growth. IN: Sb. 14, 34-40. (LZhS, 3/72, #7291)

274. Kvyatkovskaya, Ye. F., O. M. Konovalov, L. L. Nagornaya, and S. F. Prokopovich. Study of the kinetics of fusion evaporation applicable to YIG single crystal growth. IN: Sb. 14, 115-120. (LZhS, 3/72, #7207)

L. GENERAL LASER THEORY

275. Bozhkov, A. I., and F. V. Bunkin. Optical excitation of surface waves in transparent condensed media. ZhETF, v. 61, no. 6, 1971, 2279-2286.

276. Chernikova, V. A self-consuming beam. Khimiya i zhizn', no. 1, 1972, 6-13.

277. Fara, V. Basic properties of coherent optical fields. Equivalence of classical and quantum descriptions of coherent optical fields. Studii si cercetari fizica, v. 23, no. 7, 1971, 833-851. (RZhF, 2/72, #2D1136)

278. Gadomskiy, O. N., and V. R. Nagibarov. Stimulated coherent processes. ZhETF, v. 62, no. 3, 1972, 896-900.

279. Gazazyan, A. D. Light scattering by a quantum harmonic oscillator. Teoreticheskaya i matematicheskaya fizika, no. 3, 1972, 388-398.

280. Golubev, Yu. M. Interaction of external radiation with a medium inside a resonator. I. OiS, v. 32, no. 1, 1972, 125-131.

281. Il'inova, T. M., M. P. Il'inov, and R. V. Khokhlov. Interaction between radiation and quantized systems with relaxing sublevels. IN: Sb. 8, 43-52.

282. Klimontovich, Yu. L., A. S. Kovalev, and P. S. Landa. Inherent fluctuations in lasers. UFN, v. 106, no. 2, 1972, 279-313.

283. Kravchenko, V. B. Requirements for analytical control of materials in quantum electronics. IN: Sb. 10, 26-30. (RZhRadiot, 1/72, #1D456)

284. Melekhin, G. V. Interaction between emission lines in a cascade section. OiS, v. 32, no. 1, 1972, 150-159.

285. Milovskiy, N. D., and L. L. Popova. Stability of a single-frequency laser using a nonuniformly-broadened active material. IVUZ Radiofiz, no. 1, 1972, 19-26.

286. Minin, I. N. Theory of a nonstationary radiation field. IN: Sb. 3, 59-73. (RZhF, 2/72, #2D1186)

287. Perel'man, M. Ye., and V. G. Arutyunyan. Multiphoton photoeffect and the theory of time delay. ZhETF, v. 62, no. 2, 1972, 490-495.

288. Rozanov, N. N. Theory of phase interaction of modes. IVUZ Radiofiz, no. 1, 1972, 43-50.

289. Samson, A. M. Generation of regular nonattenuated emission spikes. IN: Sb. 15, 397-444. (RZhF, 1/72, #1D1157)

290. Sorokin, Yu. M. An energy relation for waves in systems with traveling parameters. IVUZ Radiofiz, no. 1, 1972, 51-54.

291. Vinokurov, G. N. Periodic motion of a system of weakly coupled modes of solid state lasers. OiS, v. 32, no. 2, 1972, 418-421.

292. Zhevandrov, N. D. New research in molecular luminescence. VAN, no. 3, 1972, 119-120.

II. LASER APPLICATIONS

A. BIOLOGICAL EFFECTS

293. Ginzburg, V. M., E. G. Semenov, S. N. Smirnova, and B. M. Stepanov. Holographic interferometric microscopy of living cells. DAN SSSR, v. 202, no. 2, 1972, 313-315.

294. Kirichinskiy, B. R., V. N. Shepelev, Ts. P. Medvedovskaya, G. G. Lysina, N. G. Loganovskiy, A. S. Soletskaya, and R. Kh. Vol'fovskaya. Effect of laser radiation on the bodily functions of workers. IN: Sb. 1, 108-110. (RZhRadiot, 1/72, #1D651)

295. Lagunova, I. G., Ye. D. Savchenko, N. N. Garvey, L. L. Likhovetskaya, G. G. Shamayeva, A. D. Klimov, and V. I. Mogutov. Effect of neodymium laser irradiation on a rat liver. Voprosy onkologii, no. 1, 1972, 91-94.

296. The living cell "under fire". Rabochaya gazeta, Mar. 29, 1972, p. 4.

297. Ognev, B. V., R. A. Troitskiy, and S. P. Berezina. Symposia on the problems of laser applications in medicine and biology. Khirurgiya, no. 12, 1971, 118-119.

298. Tarasov, V. A., and V. V. Rodionova. Study of the cytogenetic effect of laser radiation on allium fistulosum cells. Genetika, no. 1, 1972, 12-16.

B. COMMUNICATIONS

1. Beam Propagation in the Atmosphere

299. Armand, N. A., A. O. Izyumov, and A. V. Sokolov. Fluctuations of submillimeter radio waves. IN: Sb. 2, p. 263. (Phys. abstr, 1972, no. 16863)

300. Bogdanova, L. N., and M. V. Podkladenko. Feasibility and limitations of schematized models of infrared bands. ZhPS, v. 16, no. 1, 1972, 119-123.

301. Bukatyy, V. I., Yu. D. Kopytin, V. A. Pogodayev, S. S. Khmelevtsov, and L. K. Chistyakova. Photoreactive motion of aerosol particles under optical radiation. IVUZ Fiz, no. 3, 1972, 41-44.

302. Kolosov, M. A. Studies of laser radiation attenuation in artificial fog. IN: Sb. 2, p. 261 (Phys abstr, 1972, no. 16842)

303. Muro, E. L. Optimal treatment of the back-scattered optical signal in determining the structure of atmospheric formations. OMP, no. 1, 1972, 21-24.

304. Pogosyan, K. P., Yu. Kh. Ayunts, and V. M. Dzhulakyan. Study of atmospheric effect on the directional pattern of CO_2 laser radiation. IN: Tr. 1, 65-70. (R ZhF, 1/72, #1Zh196)

305. Pokrovskiy, O. M. Comparison of statistical methods for solving inverse problems of atmospheric optics. FAiO, no. 2, 1972, 231-233.

306. Romanova, L. M. Nonstationary optical field in turbulent media. IN: Sb. 3, 74-92. (RZhF, 1/72, #1D1066)

307. Semenov, A. A., A. A. Tishchenko, and T. I. Arsen'yan. Use of diffraction antennas in the optical range for studying laser radiation propagation in the atmosphere. IVUZ Fiz, no. 2, 1972, 144-146.

308. S"yedin, V. Ya., and S. S. Khmelevtsov. Broadening of focused light beams in a turbulent atmosphere. IVUZ Fiz, no. 3, 1972, 91-96.

309. Zuyev, V. Ye., and M. V. Kabanov. Some findings from studies on the optics of clouds and fogs. IN: Sb. 3, 325-337. (RZhF, 1/72, #1D1062)

2. Beam Propagation in Liquids

310. Avaliani, Dzh. I., T. Sh. Zoidze, and V. K. Pokryshchenko. Transmission spectral characteristics of various /laser/ solutions. IN: Tr. 2, 231-233. (LZhS, 11/72, #34352)

311. Blaszczak, Z., and A. Dobek. Thermal changes in the refractive index of liquids induced by a pulsed ruby laser beam. Acta physica polonica, v. A41, no. 2, 1972, 187-192.

312. Dritov, L. A., L. A. Podgornaya, P. P. Zaytsev, and G. I. Sorokin. Propagation of electromagnetic waves in a turbulent liquid flow. IN: Tr. 3, 123-126. (RZhMekh, 1/72, #1B64)

313. Kozlyaninov, M. V., O. V. Kopelevich, Yu. Ye. Ochakovskiy, and V. N. Pelevin. Contemporary problems in marine optics. IN: Sb. 3, 404-431. (RZhF, 1/72, #1D1063)

314. Krasil'nikov, V. A., and V. I. Pavlov. Nonlinear attenuation of plane monochromatic waves on the surface of a liquid. VMU, no. 1, 1972, 94-98.

315. Kryukov, P. G., Yu. A. Matveyets, and S. V. Chekalin. Direct observation of refractive index gradients caused by an ultrashort laser pulse in liquid. ZhETF P, v. 15, no. 3, 1972, 147-150.

316. Makhlin, A. N. Spatial coherence of light scattered by density fluctuations in pure liquids. ZhETF, v. 62, no. 3, 1972, 901-907.

317. Podgornaya, L. A., L. A. Dritov, G. I. Sorokin, and P. P. Zaytsev. Scattering of electromagnetic waves in the optical band by turbulent motions of a liquid in an infinite plane. IN: Tr. 3, 108-113. (RZhMekh, 1/72, #1B65)

3. Systems

318. Abramov, K. D., and V. I. Lakhno. Tuning of an optical transmitter by means of a c-w laser. IN: Sb. 4, 34-42. (RZhRadiot, 1/72, #1D310)

319. Avdeyenko, N. S., V. G. Kolmogorov, and V. I. Shcherbik. Use of lasers to observe movements in the Earth's surface. SOAN SSSR. Geologiya i geofizika, no. 9, 1971, 79-83.

320. Byalik, V. L., and L. M. Gvozdeva. Regeneration of a bipulsed signal of pulse-code modulation in an optical communications line during fluctuations in the synchronizing channel. IN: Tr. 4, 24-32. (RZhRadiot, 2/72, #2D432)

321. Chernikov, A. A. Symposium on radio ranging and laser methods in cloud physics [15th general assembly of the International geodesic and geophysical union, Moscow, 30 July - 14 August 1971]. Meteorologiya i gidrologiya, no. 12, 1971, 114-116.

322. DNR-06 self-reducing DME scope. OMP, no. 1, 1972, 42 ff.

323. Fochianu, V. Propagation and detection of modulated light in communications systems. Posta si telecomunicatii, no. 4, 1971, 199-207.

324. Gorbenko, O. I. On the attainable precision of a diffraction method for alignment readings. IVUZ Geodez, no. 7, 1970, 31-34.

325. Hoff, F. Current status and prospects of radiooptics. Slaboproudy obzor, v. 32, no. 9, 1971, 415-421. (RZhRadiot, 2/72, #2D475)

326. Kopylov, P. M., and E. V. Medvedev. Experimental studies of visual resolution capabilities with coherent light. IN: Sb. 5, 41-45. (RZhRadiot, 2/72, #2D430)

327. Korotkov, S. A., and A. S. Fedorov. Geodetic measuring device. Author's Certificate, USSR, no. 280888, published Nov. 30, 1970. (RZhGeod, 12/71, #12.52.295)

328. Kruglov, R. A. Method for objectively evaluating the correctness of results in measuring the height of a lower cloud boundary. IN: Tr. 5, 14-20.

329. Kube, E. Optical transmission of communications using semiconductor radiation sources. Nachrichtentechnik, no. 3, 1972, 90-93.

330. Lom, T. Short encyclopedia of lasers. Sdelovaci technika, v. 18, no. 10, 1970, 303-305.

331. Medvedskiy, V. I. Construction of a space geodesic net by a linear-angular method. Geodeziya i kartografiya, no. 1, 1972, 20-25.

332. Mel'nik, Yu. A. Estimating the resolution capabilities of a coherent radiometric system. IN: Sb. 6, 3-9.

333. Mikheyechev, V. S. Diagram of a phase heterodyne optical DME. IVUZ Geodez, no. 2, 1971, 107-112.

334. Ostrovskiy, L. A., and L. V. Soustov. "Self-modulation" of e-m waves in nonlinear transmission lines. IVUZ Radiofiz, no. 2, 1972, 242-248.

335. Panasko, B. V. Requirements for the parameters of an optoacoustical signal processor for a phased antenna array. IVUZ Radioelektr, no. 1, 1972, 46-51.

336. Potekhin, V. A., V. I. Dzhun', and D. B. Kanareykin. Polarization selection for the receiving antenna of a synthetic aperture radar system. RiE, no. 3, 1972, 488-492.

337. Prudnikov, I. N., V. N. Bol'shov, S. A. Ginzburg, A. M. Zhilkin, I. V. Kreyngel', A. S. Levitin, N. Litvanovich, Yu. Roditel'skiy, V. P. Filimonov, V. Chertov, and I. S. Shirokov. Experimental study of a lightguide with gas lenses. IN: Sb. 1, 20-27. (RZhRadiot, 1/72, #1D649)

338. Razumov, O. S. Simultaneous determination of length and direction of a chord according to observation by artificial earth satellite. IVUZ Geodez, no. 3, 1971, 43-47.

339. Ruzanov, I. V., L. S. Murashov, A. V. Chepkunov, and I. V. Benedichuk. Feasibility of using laser techniques for recording television programs (review). TKiT, no. 1, 1972, 58-61.

340. Satellite lidar. Bulletin Ceskoslovenske akademie ved, no. 1, 1972, 2.

341. Serapinas, B. B. Calculating the regimes of visual electrooptical DME's with compensating Kerr cells. IVUZ Geodez, no. 1, 1971, 50-52.

342. Sklyarov, O. K. Measuring the signal/noise ratio during transmission of discrete information over optical communication lines. IN: Tr. 4, 152-158. (RZhRadiot, 2/72, #2D433)

343. Tatarinov, V. V. Criteria for the optics of a laser system for reading coordinates of three-dimensional models. IN: Tr. 6, 106-108. (RZhF, 1/72, #1D1308)

344. Tyabotov, A. Ye., V. I. Shlyakhov, and A. B. Shupyatskiy. Study of the structure of meteorological objects by means of a lidar. Meteorologiya i gidrologiya, no. 2, 1972, 100-108.

345. Valyus, N. A., and T. A. Stepanova. Methods of changing the aperture in fiber optic elements. IN: Sb. 7, 57. (RZhRadiot, 2/72, #2D427)

346. Vartanyan, E. S., and R. A. Kazaryan. Calculating the probability of error in a binary optical communications channel using intensity modulation of a laser. IN: Tr. 1, 35-42. (RZhF, 1/72, #1Zh76)

347. Yurist, B. V., and N. Sh. Khaykin. Study of the conversion factor in the mixer of an optical heterodyne receiver. RiE, no. 1, 1972, 103-110.

348. Zarkevich, Ye. A., O. N. Makeyev, and T. S. Sultan-Zade. Experimental results with a photosensing device for open communications lines. IN: Sb. 1, 38-43. (RZhRadiot, 1/72, #1D652)

4. Theory of Propagation

349. Aleksandrov, Ye. B., O. V. Konstantinov, V. N. Kulyasov, A. B. Mamyrin, and V. I. Perel'. Characteristic transformation of the fluctuation spectrum of radiation passing through a resonant medium. ZhETF, v. 61, no. 6, 1971, 2259-2269.

350. Arutyunyan, V. M., E. G. Kanetsyan, and V. O. Chaltykyan. Polarization effects from propagation of radiation through a resonant medium. ZhETF, v. 62, no. 3, 1972, 908-917.

351. Barabanenkov, Yu. N., and V. M. Finkel'berg. Green function method in the theory of multiple scattering of waves. IN: Sb. 3, 171-186. (RZhF, 1/72, #1D1059)

352. Dolginov, A. Z., and N. A. Silant'yev. Propagation of radiation in optically thin anisotropic media. ZhETF, v. 62, no. 1, 1972, 100-110.

353. Feyzulin, Z. I. Covariances of amplitude and phase fluctuations in the presence of regular refraction. IN: Tr. 7, 35-47. (RZhMekh, 12/71, #12B220)

354. Gal, L. K., and N. A. Khizhnyak. Scattering of randomly incident electromagnetic waves on a thin anisotropic elliptical cylinder. IN: Tr. 8, 82-90. (RZhMekh, 12/71, #12B272)

355. Gavrilenko, V. G., and Ya. M. Dorfman. Theory of scattering in media with space-time fluctuations. IVUZ Radiofiz, no. 2, 1972, 249-256.

356. Germogenova, T. A. Numerical methods in solving boundary problems for transfer equations. IN: Sb. 3, 29-42. (RZhF, 1/72, #1D1048)

357. Ivanov, A. P. Using multiple scattering methods for studying the optical properties of a substance. IN: Sb. 3, 245-263. (RZhF, 1/72, #1D1072)

358. Ivanov, A. P. Principles and methods for measuring scattering indicatrixes and indices of attenuation, absorption and scattering. IN: Sb. 3, 264-292. (RZhF, 1/72, #1D1067)

359. Ivanov, V. V. Transfer problems of resonant radiation. IN: Sb. 3, 93-113. (RZhF, 1/72, #1D1058)

360. Kats, A. V., and V. V. Maslov. Stimulated scattering of electromagnetic waves from the surface of a highly conductive medium. ZhETF, v. 62, no. 2, 1972, 496-504.

361. Khalfin, L. A. High power asymptotics of scattering amplitudes and vertex functions. ZhETF P, v. 15, no. 4, 1972, 215-218.

362. Kotov, Ye. I. Spectra of diffused reflection as an information source on the absorption spectra of adsorbed molecules. IN: Sb. 3, 387-395. (RZhF, 2/72, #2D1154)

363. Kravtsov, Yu. A., V. I. Tatarskiy, and Z. I. Feyzulin. Broadening of spatially limited electromagnetic radiation beams in a randomly inhomogeneous medium. IN: Tr. 7, 3-34. (LZhS, 4/72, #10374)

364. Lomanov, V. V., and O. V. Shakin. Light scattering in elastic waves in uniaxial crystals. FTT, no. 1, 1972, 229-236.

365. Marchuk, G. I., and G. A. Mikhaylov. Solving problems of radiative transfer theory by the Monte-Carlo method. IN: Sb. 3, 43-58. (RZhF, 1/72, #1D1045)

366. Mezrina, L. F. Photomagnetic waves in a polarized light flux. FTP, no. 3, 1972, 583-584.

367. Moneva, I., and S. Frenkel'. Introduction to the method of small angle scattering of linearly polarized light. Techniques of a diffraction experiment. IN: Izv. Otd. khim. nauki. Bulgarskata Akademiya na Naukite, v. 4, no. 2, 1971, 173-185. (RZhF, 2/72, #2D1200)

368. Nagirner, D. I. Analytical methods in the theory of radiative transfer. IN: Sb. 3, 15-28. (RZhF, 1/72, #1D1046)

369. Prishivalko, A. P., and L. G. Astaf'yeva. Energy distribution in homogeneous absorbing particles irradiated by a parallel light beam. ZhPS, v. 16, no. 2, 1972, 344-350.

370. Radchenko, I. S. Attenuation of light by particles of trace colloids in sapphire crystal. IN: Sb. 3, 396-403. (RZhF, 1/72, #1D1069)

371. Ramm, A. G. Electromagnetic wave scattering on small bodies of random form. IN: Tr. 8, 176-186. (RZhMekh, 12/71, #12B269)

372. Romanov, V. Ye. Calculating the light absorption cross-section of dielectric particles. IN: Tr. 10, 124-133. (RZhF, 1/72, #1D1052)

373. Rozenberg, G. V. Electrodynamics of statistically inhomogeneous media and transfer theory. IN: Sb. 3, 159-170. (RZhF, 1/72, #1D1000)

374. Rvachev, V. P. Contemporary methods for optics of dispersive media in studies of living leaves of plants. IN: Sb. 3, 338-360. (RZhF, 1/72, #1D1073)

375. Samartsev, V. V., and N. N. Kurkin. Theory of coherent light propagation in resonant media. OiS, v. 32, no. 2, 1972, 413-415.

376. Semenyaka, Ye. N., and I. V. Sukharevskiy. Diffraction in weakly curved layered structures of great thickness. IN: Tr. 8, 208-215. (RZhMekh, 12/71, #12B268)

377. Shifrin, K. S. Study of the properties of a substance by means of single scattering. IN: Sb. 3, 228-244. (RZhF, 1/72, #1D1071)

378. Shmelev, A. B. Scattering of directional electromagnetic waves on a statistically uneven surface. IN: Tr. 7, 54-70. (LZhS, 4/72, #10487)

379. Shmelev, A. B. Wave scattering on statistically irregular surfaces. UFN, v. 106, no. 3, 1972, 459-480.

380. Sobolev, V. V. Theory of nonisotropic scattering of light. IN: Sb. 3, 5-14. (RZhF, 1/72, #1D1061)

381. Sveshnikov, A. G., and A. S. Il'inskiy. Direct method for solving diffraction problems on a local inhomogeneous body. ZhVMMF, no. 4, 1971, 960-968.

382. Terina, G. I. Propagation of pulsed signals in media with absorption and dispersion. RiE, no. 3, 1972, 611-613.

383. Time, N. S. Estimate of the turbulence spectrum in the dissipation range from measurements of laser radiation fluctuations. FAiO, no. 1, 1972, 90-92.

384. Tsyganov, N. L., and A. V. Chalyy. Light propagation in an optically inhomogeneous medium near the critical point. I. Monochromatic coefficients of transmission and reflection. UFZh, no. 1, 1972, 21-27.

385. Voyshvillo, N. A. A possible method for calculating small-angle scattering in measurements of attenuation and scattering indices. OiS, v. 32, no. 2, 1972, 404-407.

386. Voyshvillo, N. A. Determining the q-constant in the Rosenberg theory for media with "soft" scattering by small size particles. OiS, v. 32, no. 3, 1972, 613-617.

C. COMPUTER TECHNOLOGY

387. Belokrinitskiy, N. S., A. V. Gnatovskiy, M. V. Danileyko, V. P. Zakharov, A. V. Kozlov, and M. T. Shpak. Recording optical information in amorphous semiconductor compound films. ZhETF P, v. 15, no. 4, 198-200.

388. Deryugin, L. N., and A. P. Pichugin. Feasibility of successive volumetric storage of information in materials with nonlinear absorption. ZhTF, no. 3, 1972, 654-657.

D. HOLOGRAPHY

389. Afanas'yeva, V. L., K. S. Mustafin, and V. A. Seleznev. Polychrome holographic interferometry with recording in a three dimensional medium. OiS, v. 32, no. 3, 1972, 589-591.

390. Anaskin, I. F., I. G. Stoyanova, and N. M. Yedintsov. The resolution limit in electron holography. RiE, no. 2, 1972, 430-432.

391. Berezkin, A. N., Yu. E. Kamach, Ye. N. Kozlovskiy, V. M. Ovchinnikov, and A. I. Razumovskaya. Use of holographic interferometry for visualizing weak nonhomogeneities in gas flows. ZhTF, no. 1, 1972, 219-221.

392. Bobrinev, V. I. Method for holographing three-dimensional scenes. Author's certificate USSR, #280712, published February 3, 1971. (RZhRadiot, 11/71, #11D612)

393. Bortfeld, R. Seismic holography. Magyar geofizika, no. 1-2, 1972, 50-51.

394. Bulyutin, A. A., L. A. Dritov, and G. I. Sorokin. Reconstruction from low-frequency holograms in the optical range. IN: Tr. 3, 36-40. (RZhF, 1/72, #1D1344)

395. Butusov, M. M. Use of a matte scatterer in holographic interferometry. ZhPS, no. 2, 1972, 409-413.

396. Ginzburg, V. M., and B. M. Stepanov. Holography in measurement engineering and metrology. IT, no. 12, 1971, 21-26.

397. Girina, M. G., and G. A. Sobolev. Estimation of quality of photo material for holography using a latent image. OiS, v. 32, no. 1, 1972, 216-217.

398. Gurevich, S. B., L. V. Babin, and A. I. Plis. Doppler effects in acoustic holography. ZhTF, no. 2, 1972, 398-408.

399. Kakichashvili, Sh. D. Holography of swept images without a reference wave. ZhTF, no. 3, 1972, 650-653.

400. Klimenko, I. S., and Ye. G. Matinyan. Holographic interferometry of focused images in real time. OiS, v. 32, no. 3, 1972, 620-621.

401. Kotosonov, N. V., I. A. Khripchenko, and Ye. A. Chernov. Using infrared CO_2 lasers for holography and recording information. IN: Sb. 1, 57-59. (RZhRadiot, 1/72, #1D628)

402. Kotosonov, N. V., Ya. L. Khlyavich, and O. V. Bazarskiy. Study of spatial coherence of radiation from various SHF antennas. IVUZ Radiofiz, no. 1, 1972, 150-152.

403. Kronrod, M. A., N. S. Merzlyakov, and L. P. Yaroslavskiy. Experiments in computer-synthesized holograms of transparencies. ZhPS, no. 2, 1972, 414-418.

404. Kronrod, M. A., N. S. Merzlyakov, and L. P. Yaroslavskiy. Experiment in computer reconstruction of a hologram. ZhTF, no. 2, 1972, 419-420.

405. Larionov, N. P., A. V. Lukin, and K. S. Mustafin. Artificial hologram as an optical compensator. OiS, v. 32, no. 2, 1972, 396-399.

406. Mandrosov, V. I. Effect of quantification of a hologram transmission function on the reconstructed image quality. OiS, v. 32, no. 1, 1972, 174-177.

407. Mikaelyan, A. L., V. I. Bobrinev, K. S. Bogomolov, L. P. Vakhtanova, V. K. Kozlova, and S. M. Malinin. Feasibility of using phase holograms for making optical elements. IN: Sb. 8, 116-118.

408. Morozov, V. N., V. V. Nikitin, V. D. Samoylov, G. I. Semenov, and V. L. Smirnov. Hologram readout by means of semiconductor injection laser. IN: Sb. 8, 115-116.

409. Mustafin, K. S., and V. A. Seleznev. Use of Moire patterns in holographic interferometry with high sensitivity. OiS, v. 32, no. 2, 1972, 400-403.

410. Ostrovskiy, Yu. I. Holography and its applications. IN: Sb. 9, 357-372. (RZhF, 2/72, #2D1472)

411. Sokolov, A. P., and V. I. Timoshenko. Obtaining images of objects by acoustic holography using surface relief. IN: Tr. 11, 16-24. (RZhRadiot, 11/71, #11D562)

412. Stasel'ko, D. I., and V. S. Obraztsov. Expositional characteristics of holograms described by continuous and pulsed radiation sources. ZhNiPFiK, no. 2, 1972, 115-121.

413. Tachkov, A. N. Reconstructing images from holograms synthesized from discrete parts. IN: Sb. 5, 87-91. (RZhRadiot, 2/72, #2D428)

414. Tsvetov, Ye. P., G. Kh. Fridman, and V. F. Los'. A hologram formed by combining two holograms obtained at different frequencies. RiE, no. 3, 1972, 613-615.

415. Verbovetskiy, A. A., and V. B. Fedorov. Diffraction effectiveness of bleached holograms at the 0.44 micron wavelength. ZhTF, no. 1, 1972, 216-219.

416. Vlad, I. Operational model of a holographic process and its applications in optical processing of information. Revue Roumaine physique, v. 16, no. 1, 1971, 73-84. (RZhF, 1/72, #1D1324)

417. Zverev, V. A. Correlation and spectral analysis of a radio signal by means of generalized holograms. Radiotekhnika, no. 6, 1971, 2-6.

E. INSTRUMENTATION AND MEASUREMENT

1. Measurement of Laser Parameters

418. Andreyev, G. A., and R. M. Magid. Effect of intensity fluctuations on measuring the angular position of a radiation source, by a single-pulse electrooptical method. IVUZ Radiofiz, no. 1, 1972, 55-61.

419. Arutyunyan, A. G., S. A. Akhmanov, V. G. Tunkin, and A. S. Chirkin. Interferometry of the radiation intensity of c-w gas lasers. ZhETF, v. 62, no. 1, 1972, 70-80.

420. Bakinovskiy, K. N., V. A. Plotnikov, B. V. Rybakov, and A. F. Chernyavskiy. Equipment error in a device for measuring short-term phase instabilities in a quasi-harmonic signal. ZhPS, v. 16, no. 3, 1972, 458-461.

421. Borisov, V. S., and V. Ye. Koridalin. Study of intensity fluctuations in gas laser emission in the low and infralow frequency ranges. RiE, no. 2, 1972, 425-426.

422. Bukovskiy, B. I., and L. A. Konchukhidze. Shaper of an electrooptical device for dynamic measurements of gas lasers at IR wavelengths. IN: Tr. 12, 42-53. (RZhRadiot, 8/71, #8D239)

423. Cheremiskin, I. V., and T. K. Chekhlova. Measuring phase distribution of a field at the output mirror of a laser. OiS, v. 32, no. 1, 1972, 160-162.

424. Derogaya, L. N., G. A. Zimokosov, I. M. Korzhenevich, A. M. Ratner, and V. S. Solov'yev. Determining the angular dispersion of laser emission by a transforming system of prisms. IN: Sb. 8, 128-131.

425. Dreyden, G. V., Yu. I. Ostrovskiy, and Ye. N. Shvedova. Interference method for studying level of spatial coherence. OiS, v. 32, no. 2, 1972, 367-372.

426. Galkina, T. V., M. Kh. Zelikman, L. M. Klyukin, B. M. Stepanov, V. A. Fabrikov, and I. A. Khripchenko. Recording the structure of laser emission at 10.6μ by a selenium thin film. ZhNiPFiK, no. 2, 1972, 107-110.

427. Kurnevich, B. A., O. O. Sakayev, and A. K. Toropov. Spectrometer with an interferometer with spherical mirrors for studying gas lasers. IN: Tr. 12, 28-35. (RZhRadiot, 8/71, #8D240)

428. Kuznetsova, T. I. Measuring the time characteristics of radiation generated by multiphoton processes in opposed optical beams. IVUZ Radiofiz, no. 2, 1972, 227-232.

429. Nedranets, Yu. I., and V. I. Berezin. Use of a statistical method to study the effect of temperature regime on the stability of laser emission energy. ZhPS, v. 16, no. 1, 1972, 68-70.

430. Ovsyannikov, V. D., V. G. Medresh, and L. Ya. Brodskiy. Device for measuring the power and energy of pulsed lasers. Otkr izobr, no. 7, 1972, #329457.

2. Miscellaneous Measurement Applications

431. Abramov, V. S., Yu. A. Moma, and M. V. Nevskiy. Determining the concentration of free current carriers and the concentration profile in n-GaAs by the Faraday effect. PTE, no. 6, 1971, 174-176.

432. Anistratov, A. T., and S. V. Mel'nikova. Linear electrooptical effect in $NaNH_4SeO_4 \cdot 2H_2O$ ferroelectric. Kristal, no. 1, 1972, 149-152.

433. Antipov, A. B., and Yu. N. Ponomarev. An opticoacoustic method for laser spectroscopy. IVUZ Fiz, no. 3, 1972, 145-147.

434. Anyakin, V. A., S. A. Kutolin, and V. M. Rayetskiy. Quality control method for silicon doping by means of laser radiation. IN: Sb. 10, 54-59. (RZhF, 2/72, #2D1454)

435. Bagayev, S. N., A. K. Dmitriyev, and V. P. Chebotayev. Dual-frequency optical standard. ZhETF P, v. 15, no. 2, 1972, 91-94.

436. Bakumenko, V. M., and A. P. Antipenko. Heterodyne spectroanalyzer in the optical range. IN: Sb. 1, 8-11. (RZhRadiot, 1/72, #1D627)

437. Bashkin, A. S., E. M. Belenov, S. A. Gonchukov, A. N. Orayevskiy, V. N. Petrovskiy, and Ye. D. Protsenko. Beats in a triple frequency gas laser, and the feasibility of using them for emission frequency stabilization. KSpF, no. 8, 1971, 9-16.

438. Bogorodskiy, V. V., G. V. Trepov, and B. A. Fedorov. Possibility of using lasers to study the dynamics of glacial covers. IN: Tr. 13, 32-34.

439. Bokshteyn, M. F., E. I. Podol'nyy, and A. N. Salin. URS-A and IMASH device(s) for stress studies by photometry of light scattered at discrete points of an illuminated three-dimensional model. IN: Tr. 14, 143-146. (RZhMekh, 3/72, #3V1664)

440. Chetkin, M. V., Yu. S. Didosyan, and A. Ya. Chervonenkis. Stripe structure in orthoferrites. ZhETF P, v. 15, no. 6, 1972, 297-299.

441. Deumlich, F. Laser leveling instrument. Vermessungstechnik, no. 11, 1971, 436.

442. Deych, M. Ye., G. V. Tsiklauri, V. K. Shanin, and V. S. Danilin. Studying wet vapor flows in nozzles. TVT, no. 1, 1972, 122-129.

443. Dmitriyev, A. L. Ellipsometer with visualization of the projection pattern on an oscillograph screen. OiS, v. 32, no. 1, 1972, 191-195.

444. Domaratskiy, A. N., Yu. N. Dubnishchev, V. P. Koronkevich, V. S. Sobolev, A. A. Stolpovskiy, Ye. N. Utkin, and N. F. Shmoylov. Comparing the readings of a laser Doppler velocity meter and a thermoanemometer in the track of a cylinder. ZhPMTF, no. 1, 1972, 126-128.

445. Domaratskiy, A. N., and M. B. Kudryavtsev. Optical methods for measuring parameters of liquid and gas flows. IN: Sb. 11, 172-177. (RZhF, 1/72, #1D993)

446. Galutva, G., Yu. Lokhov, M. Orlov, and A. Aleksandrov. Jobs for the laser: measurement. Nauka i zhizn', no. 12, 1971, 43-47.

447. Gol'tsman, B. M., and S. F. Sinenko. Method for determining the thickness of films deposited on a transparent substrate. PTE, no. 1, 1972, 212-213.

448. Kaminskiy, A. A. Laser and spectroscopic properties of activated ferroelectrics. Kristal, no. 1, 1972, 231-246.

449. Kirin, Yu. M., S. G. Rautian, V. P. Safonov, and B. M. Chernobrod. Field splitting of violet lines in potassium. ZhETF, v. 62, no. 2, 1972, 466-474.

450. Kolomnikov, Yu. D. Measuring the coefficient of linear expansion of solids by a gas laser. IN: Tr. 15, 185-188. (LZhS, 14/72, #44776)

451. Kubarev, A. V., and V. R. Pronin. Basic trends in laser dosimetry and its measurement requirements. IN: Sb. 12, 297-299. (RZhMetrolog, 2/72, #2.32.58)

452. Lenkova, G. A., A. I. Lokhmatov, V. P. Koronkevich, E. B. Kolesova, Ye. I. Gurin, and G. G. Tarasov. Laser interferometer for measuring length. IT, no. 12, 1971, 27-29.

453. Lokhov, Yu., and V. Sipyagin. Lasers /brief introduction, history, and major types/. Nauka i zhizn', no. 8, 1971, 31-32.

454. Mikhaylov, B. A. Calculating the influence of an effective field of a light wave on the liquid water spectrum in the 4000-0.01 cm^{-1} range. OiS, v. 32, no. 1, 1972, 227-230.

455. Morgun, Yu. Lasers in modern technology. Promyshlennost' Belorussii, no. 1, 1972, 79-80.

456. Panteleyev, V. V., M. L. Petukh, O. I. Putrenko, T. A. Yankovskaya, and A. A. Yankovskiy. Accuracy of spectral analysis with a laser. IN: Sb. 1, 30-33. (RZhRadiot, 1/72, #1D650)

457. Perkal'skis, B. Sh, V. L. Larin, Yu. G. Kolpakov, and Yu. P. Mikhaylichenko. Educational apparatus for observing the Doppler effect using a laser. UFN, v. 106, no. 1, 1972, 161-164.

458. Poltavtsev, Yu. G., V. P. Zakharov, V. M. Pozdnyakova, and I. M. Protas. Strucrure of amorphous GaAs. Kristal, no. 1, 1972, 203-206.

459. Popov, G. P. Laser interferometer for plasma diagnostics. Otkr izobr, no. 8, 1972, #330380.

460. Pushkin, S. B., V. S. Kazachok, and S. D. Uspenskiy. Long-term frequency stability of hydrogen generators. IN: Sb. 12, 141-143. (RZhMetrolog, 2/72, #2.32.559)

461. Radunskaya, I. Quasi-optics. Nauka i zhizn', no. 12, 1971, 2-10.

462. Ryazantsev, G. Ye., I. S. Dub, Kh. K. Yambayev, and A. M. Nazarov. Bilateral laser plumb line. Otkr izobr, no. 7, 1972, #329383.

463. Shestopalov, Yu. N. Digital interference instrument. IT, no. 12, 1971, 29-31.

464. Shifrin, K. S., and V. A. Gashko. Accuracy of determining precipitation rate by active, passive, and optical ranging. FAiO, no. 12, 1971, 1315-1317.

465. Smirnov, V. I., N. I. Eremin, V. E. Kel'ch, and D. R. Sakija. Differentiating pyrites in Altai deposits by the LMA-1 laser microspectralanalyzer. Jenaer Rundschau, no. 1, 1972, 17-20.

466. Yefremov, Yu. P., and N. A. Kalinin. Measuring the velocity of light. IT, no. 12, 1971, 93-94.

F. MATERIALS PROCESSING

1. Nonlinear Surface Processing

467. Kuklev, Yu. I., G. A. Machulka. Using a laser to scribe a stereotype block. IN: Sb. 8, 86-89.

468. Plyatsko, G. V., M. I. Moysa, and L. P. Karasev. Use of a laser for removing residual welding stresses. F-KhMM, no. 6, 1971, 87-89.

469. Zhirovetskiy, V. M., M. I. Moysa, G. V. Plyatsko, and N. P. Turchenko. Some features in the changes of alloy properties after treatment by a laser beam. FKhMM, no. 1, 1972, 84-87.

2. Beam-Target Interactions

a. Metals

470. Akhmanov, S. A., A. I. Kovrigin, S. A. Maksimov, and V. Ye. Ogluzdin. Dispersion of resonant nonlinear susceptibility in potassium vapor. ZhETF P, v. 15, no. 4, 1972, 186-191.

471. Askar'yan, G. A., E. Ya. Gol'ts, and T. G. Rachmanina. Variation in the propagation and reflection of ultrasound from the action of intense light on the surface of a body in liquid. ZhETF, v. 62, no. 3, 1972, 1072-1074.

472. Avotin, S. S., E. P. Krivchikova, I. I. Papirov, P. I. Stoyev, and V. I. Tereshin. Alteration in the electric resistance of laser-irradiated beryllium. ZhETF, v. 62, no. 1, 1972, 288-293.

473. Kogan, V. G., and V. A. Lavrovskiy. Light absorption in quantized metal film. FTT, no. 2, 1972, 591-592.

474. Mirkin, L. I. Dynamic deformation of low-carbon steel from the effect of a laser beam. IN: Sb. 13, 109-112. (RZhMekh, 3/72, #3V1439)

475. Orekhov, M. V., and B. S. Slavin. Character of ejecta under laser irradiation of materials with various thermophysical properties. ZhPS, v. 16, no. 1, 1972, 153-155.

476. Siller, G., E. Buchelt, and H. B. Schilling. Properties of an electron source with laser-induced electron emission. IN: IPP-Ber, no. 0/7, 1971, 25 p. (RZhF, 1/72, #1A386)

477. Vodovatov, F. F., and M. S. Chupina. Interaction of laser radiation with solid substances for the purpose of mass spectral analysis. IN: Tr. 16, 89-98. (RZhRadiot, 1/72, #1D583)

b. Dielectrics

478. Ashmarin, I. I., Yu. A. Bykovskiy, V. A. Gridin, V. F. Yelesin, A. I. Larkin, and I. P. Sipaylo. Shock waves generated by laser irradiation of transparent bodies. IN: Sb. 8, 126-128.

479. Belozerov, S. A., G. M. Zverev, V. S. Naumov, and V. A. Pashkov. Destruction of transparent dielectrics under radiation from a mode-locked laser. ZhETF, v. 62, no. 1, 1972, 294-299.

480. Bol'shov, V. F., V. M. Gur'yanov, G. A. Machulka, and L. P. Muratova. Laser assembly for cutting glass sections. IN: Sb. 8, 84-86.

481. Moskatov, Ye. P. Laboratory for polymer mechanics. Nauka i zhizn', no. 2, 1972, 53-54.

482. Zverev, G. M., Ye. A. Levchuk, V. A. Pashkov, Yu. D. Pe yadin. Optical destruction of the surface of lithium niobate. ZhETF, v. 62, no. 1, 1972, 307-312.

c. Semiconductors

483. Epshteyn, E. M. Thermal instability of a semiconductor in a laser beam. IVUZ Radiofiz, no. 1, 1972, 33-37.

484. Shteynshrayber, V. Ya., and E. M. Epshteyn. A function to describe the photoconductivity of an electron gas under intense radiation. IAN AzSSR. Ser. fiz.-tekh, no. 4, 1971, 72-73.

485. Smirnov, V. N., and V. N. Smirnov. Modulation by intensive radiation of reflection from a semiconductor. FTP, no. 2, 1972, 423-424

486. Zakharov, V. P., and I. M. Protas. Mass spectrometric study of vapor products of type $A^{III}B^{V}$ semiconductor compounds under laser radiation. ZhTF, no. 3, 1972, 670-672.

d. Miscellaneous

487. Alexandrescu, R., and V. G. Velculescu. Obtaining local ultrahigh temperatures by means of focused laser radiation. Studii si cercetari fizica, v. 23, no. 5, 1971, 593-602. (RZhF, 1/72, #1D1314)

488. Apollonov, V. V., A. I. Barchukov, V. K. Konyukhov, and A. M. Prokhorov. Thermoelastic surface deformation of a solid by a laser beam. ZhETF P, v. 15, no. 5, 1972, 248-250.

489. Barashev, P. P. Dependence of the integral characteristics of multiquantum processes on radiation intensity. ZhETF, v. 61, no. 6, 1971, 2287-2292.

490. Buchl, K. Production of plasma with a CO_2-TEA laser from solid hydrogen targets. IPP-Berlin, no. IV/16, 1971, 25 p. (RZhF, 1/72, #1D1262)

491. Garber, R. I., Ye. I. Stepina, and A. A. Stepanov. Features of calcite crystal destruction by laser radiation. FTT, no. 1, 1972, 243-245.

492. Kruglova, A. V., and A. A. Kuznetsov. Study of bleachable films by luminescence. ZhPS, v. 16, no. 2, 1972, 365-366.

493. Kuskova, T. V., Ye. I. Raykhel's, and M. I. Rudenko. Effect of optical beams on the dislocation structure of alkali-halide single crystals. IN: Sb. 14, 48-51. (LZhS, 3/72, #7237)

494. Lugin, E. V., V. M. Mikhaylov, and S. D. Tvorogov. Attenuation of the pulse energy in media with a dispersed contour of an absorption line. IVUZ Fiz, no. 1, 1972, 155-156.

495. Mandzhikov, V. F., A. P. Darmanyan, V. A. Barachevskiy, and Yu. N. Gerulaytis. Photochromism of organic compounds under laser radiation. OiS, v. 32, no. 2, 1972, 412-413.

496. Mednis, P. M., and V. M. Fayn. Excitation of avalanche ionization in transparent dielectrics by a strong alternating electromagnetic field. ZhETF, v. 62, no. 2, 1972, 812-819.

497. Moskatov, Ye. P. Laboratory for mechanical effects of laser beams. Nauka i zhizn', no. 2, 1972, 54-56.

498. Nusinov, M. D., K. P. Florenskiy, A. V. Kuznetsov, A. I. Kosolapov, Yu. B. Chernyak, L. I. Ivanov, V. A. Yanushevich, L. V. Obukhov, and V. V. Vysochkin. Modeling the possible processes of formation of lunar regolith glassy particles. DAN SSSR, v. 202, no. 4, 1972, 811-814.

499. Zakharov, V. P., V. N. Chugayev, V. I. Zaliva, and Yu. G. Poltavtsev. Study of the graphitization process in thin carbon films under the effect of powerful light pulses. UFZh, no. 2, 1972, 279-283.

500. Znamenskiy, V. B. A variant in determining optical constants of a metal by the reflection method. OiS, v. 32, no. 2, 1972, 410-412.

501. Zubchaninova, V. N. Temperature field and stress generated in an elastic half-space from the effect of a periodically varying flux of beam energy. IN: Tr. 17, 120-131. (RZh-Mekh, 3/72, #3V119)

502. Zubchaninova, V. N. Dynamic temperature stresses appearing in a half-space from the effect of a beamed flux with a time-variant pulsed intensity. IN: Tr. 17, 131-140. (RZhMekh, 3/72, #3V120)

G. PLASMA GENERATION AND DIAGNOSTICS

503. Afanas'yev, Yu. V., E. M. Belenov, and I. A. Poluektov. Optical breakdown of molecular gases. ZhETF P, v. 15, no. 1, 1972, 60-63.

504. Afanas'yev, Yu. V., and V. B. Rozanov. Energy spectrum of multicharged ions in a laser plasma. ZhETF, v. 62, no. 1, 1972, 247-252.

505. Artsimovich, L. A. Soviet research on thermonuclear fusion. VAN, no. 1, 1972, 10-18.

506. Askar'yan, G. A., S. D. Kaytmazov, and A. A. Medvedev. Optical flares from the powerful shock wave of a laser spark. Effect of a strong external magnetic field. ZhETF, v. 62, no. 3, 1972, 918-923.

507. Basov, N. G., O. N. Krokhin, G. V. Sklizkov, S. I. Fedotov, and A. S. Shikanov. Powerful laser apparatus and the study of the effectiveness of high temperature heating of plasma. ZhETF, v. 62, no. 1, 1972, 203-212.

508. Bessarab, Ya. Ya., Yu. V. Tkach, V. P. Zeydlits, N. P. Gadetskiy, and V. V. Dyatlova. Study of collective processes in a plasma by stimulated optical emission. ZhETF, v. 62, no. 2, 1972, 569-572.

509. Bliokh, Yu. P. Stability of a monochromatic wave with respect to stimulated scattering. ZhTF, no. 3, 1972, 490-492.

510. Borodin, V. S., V. D. Gebekov, V. F. Gindina, and Yu. M. Kagan. Plasma diagnostics in a pulsed discharge in hydrogen. II. OiS, v. 32, no. 1, 1972, 17-21.

511. Burakov, V. S., P. A. Naumenkov, V. P. Ivanov, and G. A. Kolosovskiy. Study of the passage of powerful laser radiation through an optically dense plasma. ZhPS, v. 16, no. 2, 1972, 239-242.

512. Burakov, V. S., P. A. Naumenkov, V. V. Zhukovskiy, and A. F. Bokhonov. Probing a plasma by laser radiation. IN: Sb. 15, 324-375. (RZhF, 1/72, #1D1316)

513. Burakov, V. S., P. A. Naumenkov, and G. A. Kolosovskiy. Use of a tunable laser for determining the absorption capability of a plasma. ZhPS, v. 16, no. 1, 1972, 54-57.

514. Bykovskiy, Yu. A., N. M. Vasil'yev, N. N. Degtyarenko, V. F. Yelesin, I. D. Laptev, and V. N. Nevolin. Form of the ion energy spectrum in a laser plasma. ZhETF P, v. 15, no. 6, 1972, 308-311.

515. Bykovskiy, Yu. A., V. G. Degtyarev, N. N. Degtyarenko, V. F. Yelesin, I. D. Laptev, and V. N. Nevolin. Kinetic energies of ions in a laser plasma. ZhTF, no. 3, 1972, 658-661.

516. Dolgov-Savel'yev, G. G., and V. N. Karnyushin. Determining the temperature of a laser plasma from observing radiation in the x-ray and visible regions of the spectrum. ZhPMTF, no. 1, 1972, 114-117.

517. Gavrilenko, V. G., G. A. Lupanov, and N. S. Stepanov. Dynamic optical effects in plasma. IVUZ Radiofiz, no. 2, 1972, 183-190.

518. Goncharov, V. K., L. Ya. Min'ko, and Ye. S. Tyunina. Laser methods for generating plasma flows and shock waves. IN: Sb. 15, 376-396. (RZhF, 1/72, #1D1315)

519. Gribkov, V. A., V. Ya. Nikulin, and G. V. Sklizkov. Methodology of a dual-wave interferometric study of axisymmetric configurations of a dense plasma. IN: Sb. 8, 60-68.

520. Gurevich, A. V. Traveling ionization excitation in a strong electromagnetic wave field. IVUZ Radiofiz, no. 1, 1972, 11-18.

521. Gusev, V. K., G. M. Malyshev, G. T. Razdobarin, and L. V. Sokolova. Measuring electron temperature and concentration from scattering of laser emission in plasma, using a Tuman-2 assembly. ZhTF, no. 2, 1972, 340-343.

522. Ivanov, Yu. S., V. V. Ryukkert, G. V. Sklizkov, and S. I. Fedotov. A sharply focused source of short pulsed soft x-rays. KSpF, no. 7, 1971, 34-37.

523. Kheyfets, S. A. Particle motion near a surface on which total internal reflection of e-m waves takes place. IN: Tr. 18, 597-599. (Phys. abstr., 1972, no. 14379)

524. Kaliski, S. Averaged description of a combination process for cumulation laser heating of D-T plasma. IN: Tr. 19, 125-136. (RZhMekh, 1/72, #1B192)

525. ski, S. Laser heating of plasma by a heat conductivity mechanism in the case of spherical and cylindrical waves. Bulletin de l'Academie Polonaise des Sciences. Serie des Sciences Techniques, no. 1, 1972, 1(35)-6(40).

526. Kaliski, S. Averaged equations for laser heating of a two-temperature plasma, taking into consideration the nuclear fusion heat. Bulletin de l'Academie Polonaise des Sciences. Serie des Sciences Techniques, v. 20, no. 2, 1972, 23-28.

527. Kaliski, S. Cumulation of plasma and magnetic field as a result of implosion of a heavy conducting liner. Bulletin de l'Academie Polonaise des Sciences. Serie des Sciences Techniques, no. 1, 1972, 15(49)-22(56).

528. Kaliski, S. Laser heating of plasma with fusion energy being taken into consideration in the case of a plane thermal wave. A simplified solution. Bulletin de l'Academie Polonaise des Sciences. Serie des Sciences Techniques, no. 1, 1972, 7(41)-13(47).

529. Karpman, V. I. and D. R. Shklyar. Nonlinear damping of potential monochromatic waves in a nonuniform plasma. ZhETF, v. 62, no. 3, 1972, 944-956.

530. Litvak, A. G., and V. Yu. Trakhtengerts. Stimulated wave scattering in magnetoactive plasma. ZhETF, v. 62, no. 1, 1972, 228-232.

531. Nikashin, V. A., G. I. Rukman, and V. K. Sakharov. A method of producing a motion picture hologram of a dynamic process. OiS, v. 32, no. 3, 1972, 626-627.

532. Pashinin, P. P., and A. M. Prokhorov. Obtaining a high temperature deuterium plasma by laser heating of a special gas target. ZhETF, v. 62, no. 1, 1972, 189-194.

533. Petrov, G. D., A. I. Petryakov, and P. A. Samarskiy. Submillimeter laser interferometry of a carbon arc plasma. TVT, no. 1, 1972, 181-182.

534. Ryzhov, Yu. A. Absorption of e-m wave energy in a chaotic nonuniform plasma. ZhETF, v. 62, no. 3, 1972, 924-931.

535. Sizonenko, V. L., and K. N. Stepanov. Excitation of kinetic instability in a plasma by a nearly single-energy beam. IVUZ Radiofiz, no. 1, 1972, 144-145.

536. Stepanov, N. S., and Yu. M. Sorokin. Kinetic theory of reflection of e-m waves from a nonuniform moving plasma layer. ZhTF, no. 3, 1972, 578-583.

537. Tamoykin, V. V., and S. M. Faynshteyn. Nonlinear interaction of waves in a plasma with random inhomogeneities. ZhETF, v. 62, no. 1, 1972, 213-218.

538. Trubnikov, B. A. Hydrodynamics of photons in a nonuniform plasma. ZhETF, v. 62, no. 3, 1972, 971-979.

539. Vinogradov, A. V., and V. V. Pustovalov. Electron temperature of a plasma which is scattering intense light beams. ZhETF, v. 62, no. 3, 1972, 980-988.

540. Zaritskiy, A. R., S. D. Zakharov, P. G. Kryukov, Yu. A. Matveyets, and A. I. Fedosimov. Changes in the spectrum of back-scattered radiation during laser heating of a plasma. ZhETF P, v. 15, no. 4, 1972, 184-186.

III. MONOGRAPHS

541. Kabashnikov, V. P. O spektre statsionarnoy generatsii CO_2 lazera (Stationary generation spectrum of a CO_2 laser). Institut fiziki, AN BSSR. Minsk, 1971, 39 p. (RZhF, 1/72, #1D1219)

542. Khazen, A. M. Interferentsiya, lazery i sverkhbystrodeystvuyushchiye EVM (Interference, lasers and high-speed computers). Moskva, Izd-vo znaniye, 1972, 48 p.

543. Litvak, A. G., and V. Yu. Trakhtengerts. Ob indutsirovannom rasseyanii voln v magnitoaktivnoy plazme (Stimulated wave scattering in magnetoactive plasma). N.-i. radiofiz. in-t, Preprint, no. 18, Gor'kiy, 1971, 19 p. (RZhF, 1/72, #1G219)

544. Mashkevich, V. S. Kineticheskaya teoriya lazerov (Kinetic theory of lasers). Moskva, Izd-vo nauka, 1971, 472 p.

545. Rasprostraneniye lazernogo izlucheniya v atmosfere. Tezisy Vsesoyuznyy simpozium po rasprostraneniyu lazernogo izlucheniya v atmosfere (Propagation of laser radiation in the atmosphere. Theses of the All-Union symposium on propagation of laser radiation in the atmosphere). AN SSSR. Sibirskoye otdeleniye. Institut optiki atmosfery. Tomsk, Tomskiy universitet, 1971, 50 p. (RZhRadiot, 11/71, #11D525)

546. Soroko, L. M. Osnovy golografii i kogerentnoy optiki (Fundamentals of holography and coherent optics). Moskva, Izd-vo nauka, 1971, 616 p.

547. Stepanov, B. I., and A. P. Ivanov, eds. Teoreticheskiye i prikladnyye problemy rasseyaniya sveta (Theoretical and practical problems of light scattering). AN BSSR. Institut fiziki. Minsk, Nauka i tekhnika, 1971, 487 p. (RZhF, 2/72, #2D1189)

548. Trubnikov, B. N., ed. Radioelektronika opticheskogo diapazona (Radioelectronics in the optical range). Vsesoyuznyy zaochnyy mashinostroitel'nyy institut. Trudy. Moskva, 1970 (1971), 198 p. (RZhRadiot, 2/72, #2D424)

549. Turovtseva, L. S., and V. F. Turchin. Vosstanovleniye raspredeleniya chastits po razmeram v mutnykh sredakh iz opytov po rasseyaniyu monokhromaticheskogo sveta (Restoration of particle distribution according to sizes in turbulent media from experiments on scattering of monochromatic light). AN SSSR. Institut prikladnoy matematiki. Preprint, no. 30, Moskva, 1971, 59 p. (RZhF, 1/72, #1D1070)

550. Vlad, V. I. Obtaining and transmitting real-time holograms. Report (unnumbered), Comitetul Pentru Energia Nucleara Inst. Fizica Atomica. Bucharest, 1970 3 p. (Phys abstr, 1972, no. 5394)

IV. SOURCE ABBREVIATIONS

DAN SSSR	-	Akademiya nauk SSSR. Doklady
FAiO	-	Akademiya nauk SSSR. Izvestiya. Fizika atmosfery i okeana
F-KhMM	-	Fiziko-khimicheskaya mekhanika materialov
FTP	-	Fizika i tekhnika poluprovodnikov
FTT	-	Fizika tverdogo tela
IAN AzSSR. Ser. fiz-tekh.	-	Akademiya nauk Azerbaydzhanskoy SSR. Izvestiya. Seriya fiziko-tekhnicheskikh i matematicheskikh nauk
IT	-	Izmeritel'naya tekhnika
IVUZ Fiz	-	Izvestiya vysshikh uchebnykh zavadeniy. Fizika
IVUZ Geodez	-	Izvestiya vysshikh uchebnykh zavadeniy. Geodeziya i aerofotos"yemka
IVUZ Priboro	-	Izvestiya vysshikh uchebnykh zavadeniy. Priborostroyeniye
IVUZ Radioelektr	-	Izvestiya vysshikh uchebnykh zavadeniy. Radioelektronika
IVUZ Radiofiz	-	Izvestiya vysshikh uchebnykh zavadeniy. Radiofizika
KhVE	-	Khimiya vysokikh energiy
Kristal	-	Kristallografiya
KSpF	-	Kratkiye soobshcheniya po fizike
LZhS	-	Letopis' zhurnal'nykh statey
NM	-	Akademiya nauk SSSR. Izvestiya. Neorganicheskiye materialy
OiS	-	Optika i spektroskopiya
OMP	-	Optiko-mekhanicheskaya promyshlennost'
Otkr izobr	-	Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki

Phys abstr	-	Physics abstracts
PTE	-	Pribory i tekhnika eksperimenta
RiE	-	Radiotekhnika i elektronika
RZhElektr	-	Referativnyy zhurnal. Elektronika i yeye primeneniye
RZhF	-	Referativnyy zhurnal. Fizika
RZhGeod	-	Referativnyy zhurnal. Geodeziya i aeros"yemka
RZhKh	-	Referativnyy zhurnal. Khimiya
RZhMekh	-	Referativnyy zhurnal. Mekhanika
RZhMetrolog	-	Referativnyy zhurnal. Metrologiya i izmeritel'naya tekhnika
RZhRadiot	-	Referativnyy zhurnal. Radiotekhnika
Sb 1	-	Ispol'zovaniye opticheskikh kvantovykh generatorov v sovremennoy tekhnike i meditsine, part 2-3. Sbornik. Leningrad, 1971
Sb 2	-	1971 International symposium on antennas and propagation, Sendai, Japan, 1-3 September 1971. Summaries of papers.
Sb 3	-	Teoreticheskiye i prikladnyye problemy rasseyaniya sveta. Sbornik. Minsk, Nauka i tekhnika, 1971
Sb 4	-	Radioelektronika letatel'nykh apparatov, no. 3, Khar'kov, Khar'kovskiy aviatsionnyy institut, 1971
Sb 5	-	Nauchno-tekhnicheskaya konferentsiya Leningradskogo elektrotekhnicheskogo instituta svyazi. Materialy, no. 3, Leningrad, 1971
Sb 6	-	Radiotekhnika, no. 19, Khar'kov, Izd-vo Khar'kovskogo universiteta, 1971
Sb 7	-	Radioelektronika opticheskogo diapazona. Sbornik. Moskva, 1970 (1971)
Sb 8	-	Kvantovaya elektronika, no. 6, Moskva, Sovetskoye radio, 1971

Sb 9	-	Zimnaya shkola po teorii yadra i fiziki vysokikh energiy. 6th. 1971, part 3. Materialy. Leningrad, 1971
Sb 10	-	Elektronnaya tekhnika. Nauchno-tekhnicheskiy sbornik. Upravleniye kachestvom i standartizatsiyey, no. 4(10), 1971
Sb 11	-	Sistemy avtomatizatsii nauchnykh eksperimentov. Sbornik. Novosibirsk, 1971
Sb 12	-	Metrologiya v radioelektronike. Sbornik. Moskva, 1971
Sb 13	-	Vysokoskorostniye deformatsiya. Sbornik. Moskva, Izd-vo Nauka, 1971
Sb 14	-	Monokristally i tekhnika, no. 3, 1970
Sb 15	-	Kvantovaya elektronika i lazernaya spektroskopiya. Sbornik. Minsk, 1971
Sb 16	-	Elektrolyuminestsentsiya tverdykh tel. Sbornik. Kiyev, Naukova dumka, 1971
Sb 17	-	Godishn. Vissh. tekhn. uchebni zaved. Fiz., v. 6, no. 2, 1969 (1971) /Bulgarian/
Sb 18	-	Elektronnaya tekhnika. Nauchno-tekhnicheskiy sbornik. Gazorazryadnyye pribory
Sb 19	-	Mezhdunarodnaya konferentsiya po nelineynym kolebaniyam. 5th. 1969, v. 4, Kiyev, 1970
Sb 20	-	Sintez, analiz, i struktura organicheskikh soyedineniy. Sbornik, no. 3, Tula, 1971
Sb 21	-	Voprosy elektronnoy tekhniki. Sbornik, no. 2, Saratov, Saratovskiy universitet, 1971
SOAN SSSR. Geologiya i geofizika	-	Akademiya nauk SSSR. Sibirskoye otdeleniye. Izvestiya. Geologiya i geofizika.
TKiT	-	Tekhnika kino i televideniya

Tr 1	-	Yerevanskiy universitet. Uchenyye zapiski. Yestestvennyy nauk, no. 1(116). 1971
Tr 2	-	Gruzinskiy politekhnicheskiy institut. Trudy, no. 2, 1971
Tr 3	-	Ul'yanovskiy politekhnicheskiy institut. Trudy, v. 6, no. 3, 1971
Tr 4	-	Tsentral'nyy nauchno-issledovatel'skiy institut svyazi. Sbornik nauchnykh trudov, no. 1, 1971
Tr 5	-	Glavnaya geofizicheskaya observatoriya. Trudy, no. 259, 1971
Tr 6	-	Kiyevskiy politekhnicheskiy institut. Vestnik. Seriya radioelektronika, no. 8, 1971
Tr 7	-	AN SSSR. Radiotekhnicheskiy institut. Trudy, no. 5, 1971
Tr 8	-	Vsesoyuznyy simpozium po difraktsii i rasprostraneniyu voln. 5th. 1970. Trudy, Leningrad, Nauka, 1971
Tr 9	-	Nauchnyy trudy vysshikh zavedeniy. Litovskaya SSR, Ul'trazvuk, no. 3, 1971
Tr 10	-	Moskovskiy gosudarstvennyy zaochnyy pedagogicheskiy institut. Uchenyye zapiski, no. 30, 1971
Tr 11	-	Taganrogskiy radiotekhnicheskiy institut. Trudy, no. 25, 1971
Tr 12	-	Sibirskiy nauchno-issledovatel'skiy institut metrologii. Trudy, no. 9, 1971
Tr 13	-	Arkticheskiy i Antarkticheskiy nauchno-issledovatel'skiy institut. Trudy, no. 295, 1970
Tr 14	-	Vsesoyuznaya konferentsiya po polyarizatsionno-opticheskim metodam issledovaniya napryazheniy. 7th, v. 1, 1971. Trudy, Tallinn, 1971
Tr 15	-	Sibirskiy nauchno-issledovatel'skiy institut metrologii. Trudy, no. 6, 1970

Tr 16	-	Moskovskiy institut elektronnogo mashinostroyeniya. Trudy, no. 9, 1970
Tr 17	-	Kalininskiy politekhnicheskiy institut. Trudy, no. 9, 1971
Tr 18	-	International conference on high energy accelerators. 8th. Geneva, Switzerland, 20-24 September 1971. Proceedings
Tr 19	-	Proceedings of vibration problems. Polish Academy of Sciences, v. 12, no. 2, 1971
Tr 20	-	AN SSSR. Fizicheskiy institut. Trudy, no. 56, Fizicheskiye protsessy v OKG. Moskva, 1971
Tr 21	-	Vsesoyuznyy nauchno-issledovatel'skiy institut fiziko-tekhnicheskogo i radiotekhnicheskogo izmereniy. Trudy, no. 3, 1970
Tr 22	-	Novocherkasskiy politekhnicheskiy institut. Trudy, no. 236, 1971
Tr 23	-	Trudy metrologicheskikh institutov SSSR
Tr 24	-	Moskovskiy aviatsionnyy institut. Trudy, no. 207, 1971
Tr 25	-	Trudy uchebnykh institutov svyazi, no. 53, Ministerstvo svyazi SSSR, 1971
TVT	-	Teplofizika vysokikh temperatur
UFN	-	Uspekhi fizicheskikh nauk
UFZh	-	Ukrainskiy fizicheskiy zhurnal
VAN	-	Akademiya nauk SSSR. Vestnik
VMU	-	Moskovskiy universitet. Vestnik. Seriya fizika, astronomiya
ZhETF	-	Zhurnal eksperimental'noy i teoreticheskoy fiziki
ZhETF P	-	Pis'ma v Zhurnal eksperimental'noy i teoreticheskoy fiziki
ZhNiPFiK	-	Zhurnal nauchnoy i prikladnoy fotografii i kinematografii

ZhPMTF	-	Zhurnal prikladnoy mekhaniki i teoreticheskoy fiziki
ZhPS	-	Zhurnal prikladnoy spektroskopii
ZhTF	-	Zhurnal tekhnicheskoy fiziki
ZhVMMF	-	Zhurnal vychislitel'noy matematiki i matematicheskoy fiziki

V. AUTHOR INDEX

C

H

I

K

L

M

R

S

T

Z